a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

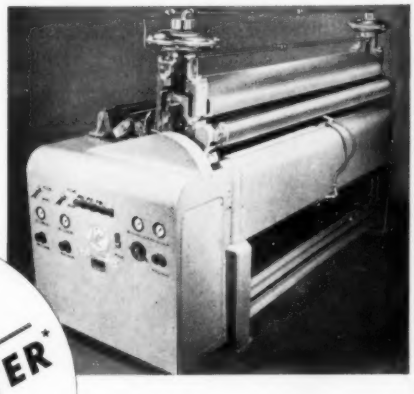
Formerly "COTTON"

DECEMBER, 1956

Executive Section 79-94
How Woodside Gets Better Cleaning 95
You Can Quickly Evaluate Warp Sizes ..97
Chemical Finishing Conference Report 99
Ways to Increase Jacquard Capacity 104
System for Grading Synthetic Blends ..108
Be Sure You Choose the Right Casters 111
What Is Best Draft Distribution for Long-Draft Roving Frames? 114
How to Select Infrared Drying System 120
Leave Statistics to Statisticians! 122
Georgia Weaving, Maintenance Forum 124
Warp Sizing, Article 8 128
Union Wins—Employees Lose 141
Knitting Section 161-169
New Equipment Parade 171-190
For complete list of contents, see page 3

University Microfilms
313 No First St
Ann Arbor Mich 4

The Cocker



SIZE MASTER*

assures positive and accurate control of
Size Penetration
Size Pick Up
. . . from crawl to high speed.

For the first time in textile history, the Cocker Size Master permits you to accurately predetermine size pick up and penetration, and to maintain these standards at all speeds. The Size Master not only assures better quality, but also materially cuts sizing and weaving costs.

Let us give you full information.

*Reg. Trade Mark

THE LEADER COCKER AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

For your 1956 Index of Articles, refer to page 215

Diehl

leads with the latest!

An entirely new
Totally-Enclosed, Fan-Cooled Textile Mill Motor

Your mill needs this motor! Its advanced design and maintenance-free features can help you stay ahead of competition. Don't make any motor commitments until you get all the details about this outstanding development.

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

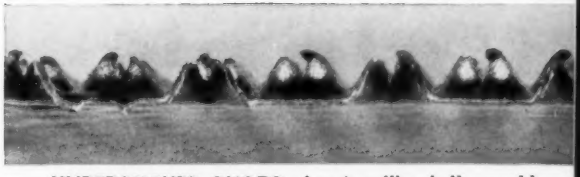
BALTIMORE • CHAMBLEE, GA. • CHARLOTTE • CHICAGO • CINCINNATI • MILWAUKEE • NEEDHAM, MASS. • NEW YORK • PHILADELPHIA

IMPROVED TAKE-UP ROLL COVERING REDUCES SECONDS

A new manufacturing method perfected by Draper Corporation now makes it possible to produce *a steel fillet covering which has uniform perforations.*

The Draper steel fillet take-up roll covering eliminates "hooks" or irregularities commonly found in fillet coverings. In addition, cloth is held firmly without the danger of cutting or tearing fibers.

This steel fillet is currently available in three grades; *extra-fine, fine* and *medium.*



UNRETOUCHED PHOTO showing "hooks" on old style fillet covering which cut or tear cloth fibers.

ACTUAL PHOTO of new Draper steel fillet covering, illustrating uniformity of perforations which reduce cloth seconds.

DRAPER CORPORATION

HOPEDALE, MASSACHUSETTS

ATLANTA, GA.

GREENSBORO, N. C.

SPARTANBURG, S. C.

You'll spin, throw, twist or spool better...

WHEN you lubricate spindles with *Texaco Spindura Oil,* yarn comes through cleaner and smoother . . . there are fewer ends down . . . production is higher...maintenance costs are lower. Some reasons why—

Texaco Spindura Oil has extra-high resistance to oxidation, thickening and gumming. This minimizes vibration, hunting and lagging . . . eliminates "drag." You can run heavy packages at full speed. Power consumption is less. And there's no atomization or fog to spoil yarn.

There is a complete line of *Texaco Spindura Oils* to meet all spindle manufacturers' requirements.

To simplify general bearing lubrication, use *Texaco Multifak.* It's ideal for all anti-friction or sleeve-type grease-lubricated bearings.

For fibre conditioning, use *Texaco Texspray Compound.* You'll assure smoother, more uniform yarn — cleaner operating conditions.

The man who can help you get these benefits is a *Texaco Lubrication Engineer.* Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

☆ ☆ ☆

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

REG. T.M.

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

NBP BPA

Textile Industries

Formerly "COTTON"

Vol. 120, No. 12
December, 1956

CONTENTS

Copyright 1956 by W. R. C. Smith Publishing Co.

Management

Task Group to Study Cotton Utilization 96
Report on Cotton Fiber Testing in Japan 112
"We Need More Specialized Research" 113
More Textiles Were Finished Last Year 121
Train Supervisors, Moffie Tells STA 143

Cotton

Improved Opening and Cleaning at Woodside 95
Sizing Materials Quickly Evaluated 97
Better Spinning with Treated Leather Aprons 103
Special Ties to Increase Jacquard Capacity 104
Draft Proportionment at Roving Frames 114
Leave Statistics to the Statisticians 122
Georgia Weaving Discussion 124
Warp Sizing, Article 8 128
Thoughts on Large Package Spinning 149
Mr. Carder, How Do You Overcome This? 153
Traverse Grinder Speeds 155

Wool

First Meeting of Southern Wool Overseers 98
Which Tape Gives Better Wool Carding? 119
Eliminate Time Jumping on W-3 Looms 153

Knitting

Sweater Uses New-Type Helanca Yarn 102
Quality Control Device for Hosiery Dyeing 151
Cam Shifts Hosiery Knitter to High Speed 155
Use Tweezers to Thread Helanca 158
Here's an Effective Approach to F-F Waste 163
Using Nylon Staple in Half-Hose 165
Pattern Design for Banner Machines, Part 2 167

Synthetics

97 Sizing Materials Quickly Evaluated
108 Grading Fabrics Made of Synthetic Blends
128 Warp Sizing, Article 8

Wet Process

99 Cotton Chemists Convene in Capitol
100 Wrinkle Resistant Finishes for Cotton
110 Printing Wool with Vat Dyes
120 How to Select an Infrared Drying System

General and Technical

111 Choose the Right Casters
119 Here's a Loom That's 75 Feet Wide
123 On Fabric Quality and Informative Labeling
124 Georgia Maintenance Discussion
141 Union Wins—Employees Lose
145 Reduce Twister Spindle Failure
151 Stops Heavy Filling Ballooning
155 Put Fur Around Filling Feeler Slot
155 Streaks in Pile Fabrics
158 Loom Picker Puller Saves Time

Departments

4 Shorts and Remnants
21 Personal Notes About Men You Know
79 News in Brief
89 An Executive Views the News in Textiles
91 Future Events
149 How Other Men Manage
171 New Equipment Parade
193 Helpful Booklets Free
203 What the Textile Mills Are Doing
206 Suppliers News

EDITORIAL AND EXECUTIVE OFFICES: 806 Peachtree St., N. E., Atlanta 8, Georgia

J. Frank Guest
Managing Editor

George H. Dockray
Executive Editor

Milton C. May
Associate Editor
P. O. Box 441
Kings Mountain, N. C.

Stanley M. Suchecki
Associate Editor
P. O. Box 131
New Canaan, Conn.

Jesse W. Ellington
Associate Editor

Melba L. Rowan
Assistant Editor

J. A. Moody, *Production Manager*

John C. Cook.....*Vice-Pres. & Bus. Mgr.*
Walter M. Mitchell, Jr.....*Advertising Manager*

Business Representatives in U. S. A.

BOSTON—Arthur C. Shaw, *27 Southgate Rd., Wellesley 81, Mass. (Phone: Wellesley 5-3648).*

NEW YORK—William K. Hoffman, *58 Euclid Ave., Maplewood, N. J. (Phone: South Orange 2-2484).*

PHILADELPHIA—George Isherwood, *590 Rutherford Dr., Springfield, Pa. (Kingswood 30760).*

CHICAGO — A. C. Petersen, *333 North Michigan Ave., Chicago 1, Ill. (Phone: Central 6-6964).*

CLEVELAND—A. E. C. Smith, *P. O. Box 3054, Cleveland 17, Ohio (Phone: Cherry 1-7352).*

PITTSBURGH-BUFFALO AREA—J. D. Parsons, *39 Atlantic Ave., Cohasset, Mass. (Phone 4-0712).*

CHARLOTTE—W. Cliff Rutland, *Box 162, Gastonia, N. C. (Phone: University 7-7995).*

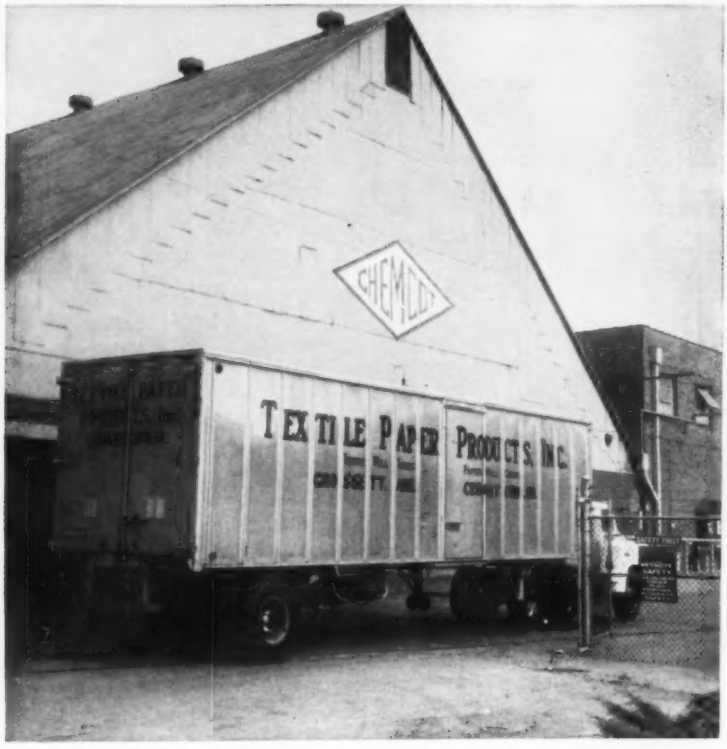
MIAMI—Ray Rickles, *814 Chamber of Commerce Bldg., Miami, Fla. (Franklin 9-1495).*

LOS ANGELES—L. B. Chappell, *8693 Wilshire Blvd., Beverly Hills, Calif. (Olympia 2-1490).*

TEXTILE INDUSTRIES is published monthly, with an extra issue in November, at 116 E. Crawford St., Dalton, Ga., by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga., U. S. A. W. J. Rooke, chairman of the board; R. P. Smith, president. Executive and Editorial Offices: 806 Peachtree St., N. E., Atlanta 8, Ga. Subscription Rates: United States and Possessions, $2.00 for one year; Canada, South America, Central America, $2.00 per year; Foreign Countries, $5.00 per year. Entered as second-class matter at the post office, Dalton, Georgia, under the Act of March 3, 1879.

SOUTHERN CHEMICAL COTTON CO.
gets good tubes at modest cost

Both specifications filled by Textile Paper Products



HELPING A MILL'S PROFIT PICTURE, as well as the solution of a technical problem, is close to our hearts here at Textile Paper Products.

For the winding of their product, Southern Chemical Cotton Company required a tough lightweight tube *at reasonable cost*. This we developed for them. An additional advantage they have obtained is over-night delivery by our own fleet. Let us help your profit picture.

TEXTILE PAPER PRODUCTS, INC.

Manufacturers of better Tubes, Cores, Boards, Car Lining and Beaming Paper

Home Office Cedartown, Ga.
Plants in Cedartown, Crossett, Ark., Bogalusa, La.

Shorts and Remnants

by J. C. C.

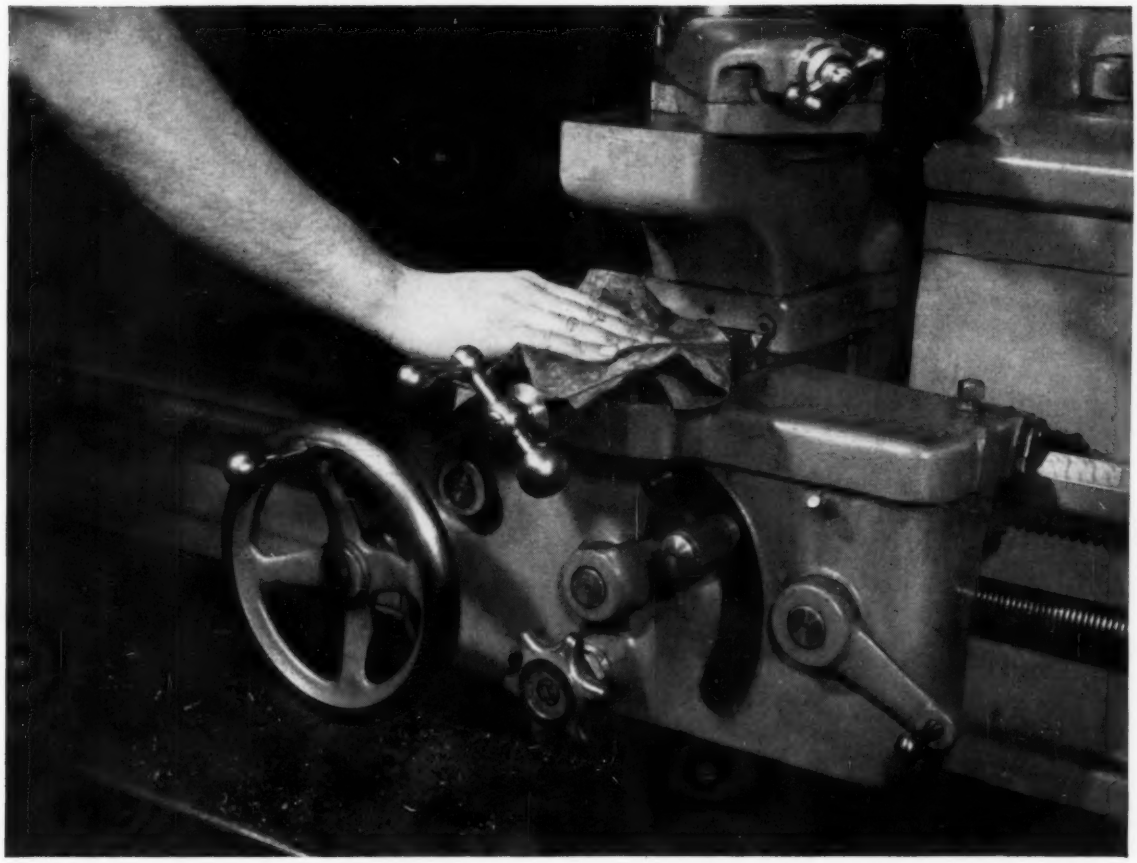
► "Hark the herald (little ones too) angels sing
"Glory to the new born King."

Let the chimes ring out and crowd out the Hit Parade, Juke Box Top Tunes, etc. — for a couple of weeks anyway.

And ole S&R, along with all the Santa Clauses — department store, Salvation Army, street corner, amateur, pillow-stuffed, fallen-arched, husky-voiced — along with all the old St. Nicks you can think of, wishes all of you who drop by this month "a very Merry Christmas."

Lights are burning more brightly all over the world as 1956 nears to a close, than in all the 1956 years since the angels sang, and old Gloomy Gus is taking a bad licking even in textile circles. While you are thinking of Christmas and textiles, just figure out all those shirts, dresses, hosiery, neckties, rugs, handkerchiefs, doll clothes and all the many textile items that Santa leaves under the tree and there's some more yarn being chewed up — but good — bringing delight to the National Cotton Council, The American Cotton Manufacturers Institute, The Wool Bureau, The Rayon Institute, The Southern Textile Assn., even the American Sheep Producers Council, who tell us to eat more lamb (and use more wool).

► While we are on it, since he is



How to clean up in a $100,000,000 market

$100,000,000 by 1960—that's the market predicted for non-woven fabrics by many authorities. Industrial wiping cloths, filter cloths, towels, tablecloths, wall coverings, draperies, backings for plastic sheeting, fillers for plastic laminates, linings for padded garments, even wearing apparel fabrics, are just some of the markets for this new material that's best made with CHEMIGUM LATEX.

CHEMIGUM LATEX is a colloidal dispersion of a butadiene-acrylonitrile copolymer. It is used, along with modifying materials, in the bonding agent of non-woven fabrics to impart permanent adhesion, flexibility and softness to the smooth, porous, multidirectional strength mat of random fibers.

Moreover, CHEMIGUM LATEX fits readily into the average textile plant. It is easily handled and compounded. No complicated equipment or processing problems are involved in giving you an unusual product of wide application. Write today for details and the latest *Tech Book Bulletins* on CHEMIGUM LATEX in non-woven fabric and many other textile uses. Address:

Goodyear, Chemical Division, Akron 16, Ohio

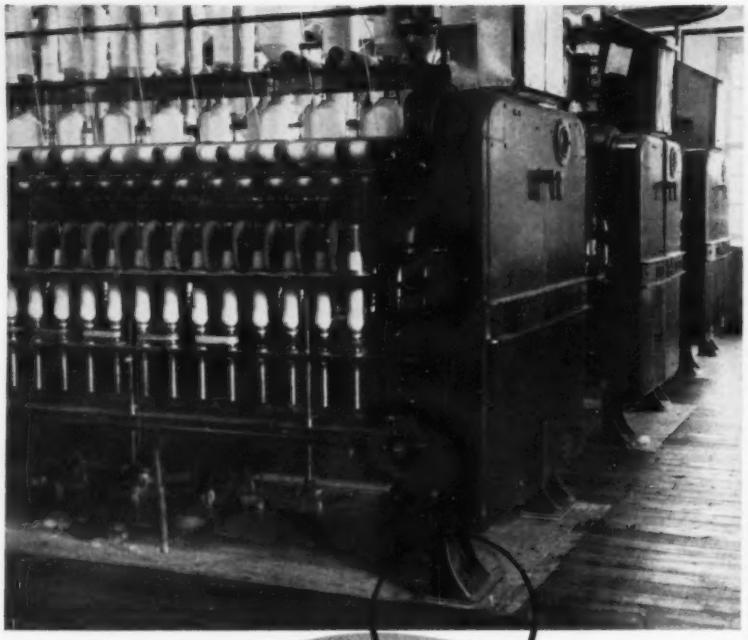
CHEMICAL
GOODYEAR
DIVISION

COATINGS
DEPARTMENT

Chemigum, Plioflex, Pliolite, Plio-Tuf, Pliovic—T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

CHEMIGUM • PLIOFLEX • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS

High Polymer Resins, Rubbers, Latices and Related Chemicals for the Process Industries



Look to Your Machine Mounts to Improve Production

The real key to getting more profit out of your machine tools may be their mounting. That's the job for Unisorb! Here's why . . .

- Increases machine life, less jarring and wearing.
- Machine holds to designed tolerances, and for much longer time.
- Operator efficiency increased, cuts fatigue.
- Makes faster machine speeds practical.
- Greater accuracy results in fewer rejects.

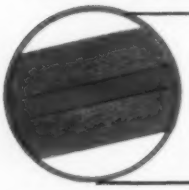
Get the free book to see how Unisorb has paid off for other companies . . . and to find out how you can put Unisorb to work earning profits in your plant.

FE6-10

The name to remember is...

UNISORB

the **FELTERS** company
235 SOUTH STREET, BOSTON 11, MASS.
Manufacturers of Felt and Felt Products
Offices: New York, Philadelphia, Chicago, Detroit, St. Louis
Sales Representative: San Francisco
Mills: Johnson City, New York; Millbury, Mass.; Jackson, Mich.
Representatives in principal cities throughout the world



Send for FREE "Facts" Booklet

Name.....Title.....
(Please Print)
Company.....
Street.....
City.....Zone....State.....

Shorts and Remnants

a nice guy, orchids to Ed Lipscomb, adv. mgr., National Cotton Council, who has just been appointed chairman of Public Relations for the White House People - to - People Program to publicize U.S.A. objectives and principles throughout the world.

Mr. Lipscomb

► We have a new textile poet for ole S&R—**Watson J. Wood,** Knitters Limited, Lindsay, Ont., Can., submits several verses such as:

TRUTH

Textile men are marvellous
The moment from their birth
Destined to clothe in worthiness
The peoples of the earth.

They have a sense of numour
And a language all their own;
To dress the world in splendour —
They explore the great unknown.

When man-made fibers came along
The scientists' song had then been sung;
Where he left off our job begun
Textile men have the world to run.

► Remnants from 1956 Southern Textile Exposition, Greenville, S. C. "Jake," came down from Danielson, Conn., was an important part of the

"Jake" and Wm. Muller, V.P. E. H. Jacobs Div., Charlotte, N. C.

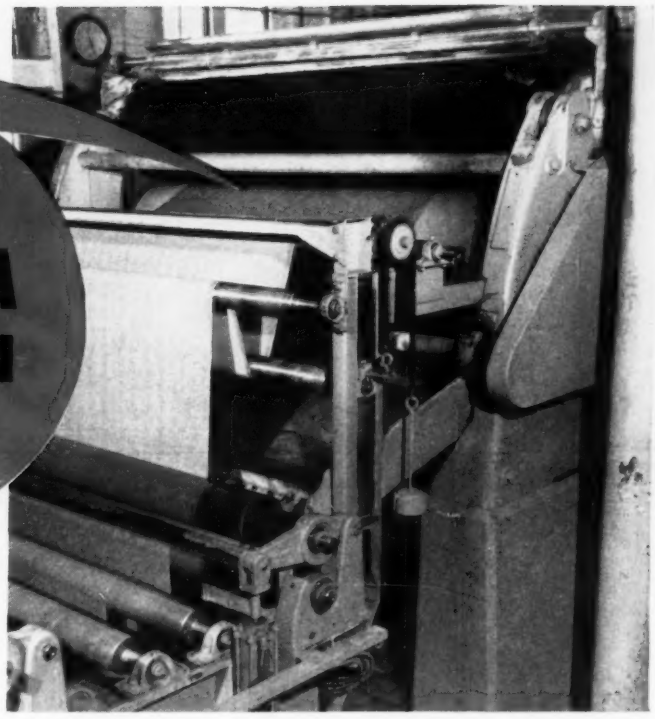
E. H. Jacobs Div. booth across from TI. He claims the Show really wore him down — that he "was 6 feet 2 when it started."

(Continued on page 8)

for

UNIFORM EXTRACTION

here



Outstanding performance of MICROROK bottom roll in this carbonizer resulted in substantial economy of maintenance costs.

STOWE-WOODWARD

MICROROK® BOTTOM ROLLS

This ad first appeared in August 1954... Now after another two years of continuous operation the Microrok roll is still going strong. Think of the savings this could bring to Your Plant.

To provide the squeezing action which insures uniform acid extraction and eliminates shaded goods, the MICROROK roll above was installed in a carbonizer in a well known textile finishing plant.*

More than 2 years of round-the-clock operation have demonstrated exceptional performance. Its unusual wearing qualities were proved when micrometer tests showed not even .001" loss of crown. Chemically inert, the MICROROK roll is impervious to acid deterioration.

Based on this extraordinary record of performance, the plant superintendent estimates that the MICROROK roll should provide continuous maintenance-free service for 5 years.

Compared with conventional rolls normally requiring regrinding at least annually, this represents an important saving . . . both in maintenance costs and in the elimination of down time involved in the removal of hard-to-get-at bottom rolls.

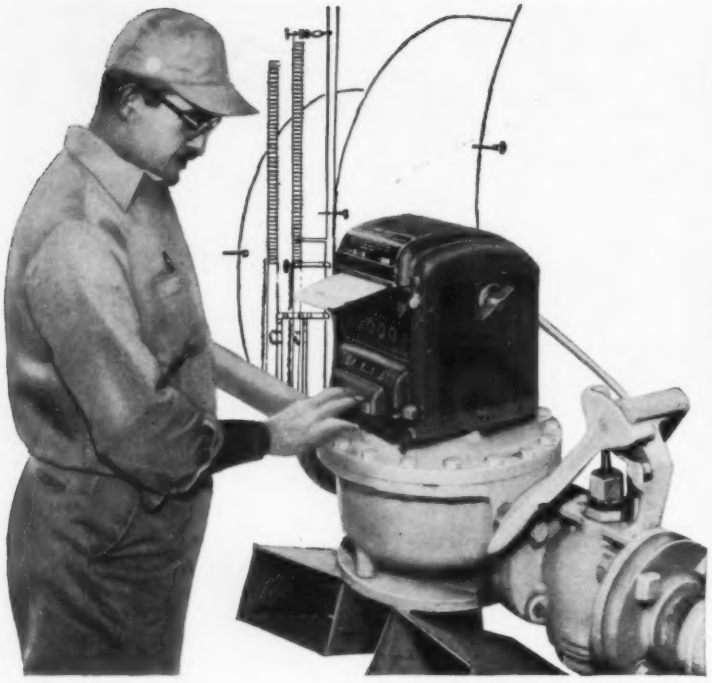
Ask your Stowe-Woodward representative about MICROROK

*Name supplied on request

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA



New quality control- Meter-Printed Batch Tickets with

NEPTUNE *liquid* METERS

Get printed proof of delivery and automatic control of liquids going into the batch . . . with the Neptune Print-O-Meter. Prints exact quantities, with serial numbers and code letters to identify the batch and/or station. Foolproof operation . . . ticket is inserted and locked in place in meter before delivery. Ticket cannot be removed before being printed out.

You get quality control and dispute-free printed records of delivery if you handle any of these liquids (and others too!). Print-O-Meter sizes: 1 to 4 in., capacities 5 to 500 gpm. Other meters 2 to 1000 gpm.

Send for free Technical Metering Bulletin 567-HTI.

neptune

NEPTUNE METER COMPANY

19 West 50th Street, New York 20, N. Y.

Branches in

ATLANTA • BOSTON • CHICAGO • DALLAS • DENVER
LOS ANGELES • LOUISVILLE • NO. KANSAS CITY, MO.
PHILADELPHIA • PORTLAND, ORE. • SAN FRANCISCO (Millbrae)
In Canada: TORONTO 14, ONT.

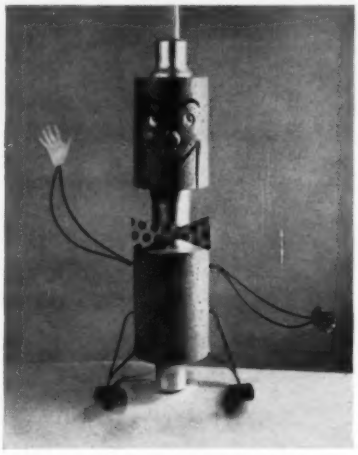
How many of these liquids can you handle better with Neptune?

Acetates	Lime Water
Acetone	Linseed Oil
Alcohol	Liquid Soap
Ammonium Nitrate	Liquid Sugar
Ammonium Sulfate	Lubricating Oil
Banana Oil	Methylated Spirits
Barium Chloride	Methyl Bromide
Benzol	Methyl Formate
Borax Solution	Methyline Chloride
Brine	Mineral Spirits
Bunker "C"	Molasses
Butanol	Naphtha
Calcium Chloride	Oleic Acid
Carbon Bisulphide	Oleum Spirits
Carbon Tetrachloride	Paint
Castor Oil	Paraffin Oil
Cellulose Solvent	Paste
China Wood Oil	Perfume
Chloropicrin	Pine Oil
Chocolate	Plasticizer
Cocoa Butter	Polymer, Molten
Coconut Oil	Propylene Glycol
Coffee	Pyrethrum Mixtures
Condensate	Rum
Corn Syrup	Shellac (Alcohol)
Cotton Seed Oil	Silicone Oil
DBT	Soap Solution
Dextrine Solution	Sodium Benzoate
Diacetone	Sodium Carbonate
Dibutyl Phthalate	Sodium Chloride
Diethyl Carbitol	Sodium Silicate
Diethylene Glycol	Soy Bean Oil
Dimethyl Phthalate	Starch Solution
Ethyl Cellosolve	Stearic Acid
Ethylene Glycol	Styrene Monomer
Fish Oil	Sugar Syrups
Formaldehyde	Tallow
Freon	Tannic Acid
Fuel Oil, Hot	Trichlorethylene
Glucose	Tungwood Oil
Glue, Water Sol.	Turpentine
Glycerine	Varnish
Grease	Vinyl Lacquer
Ink	Water
Isobutylene	Wax Emulsions
Isopropanol	Whiskey
Kerosene	Wine
Lacquer	Xylol

Shorts and Remnants

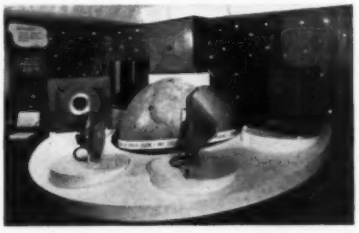
(Continued from page 6)

An animated talking cot was a feature of the Dayton Rubber Co. exhibit, answering questions and conversing with spectators better than



a lot of salesmen who were hoarse after a week of talking over the machinery noise.

Then there was a wide horizon feature with the world globe that



took your breath away at Pneumafil Corp. exhibit.

And here we have **Frank J. Matte,** Mgr. SKF Industries Textile Dept., holding up the 40 millionth textile

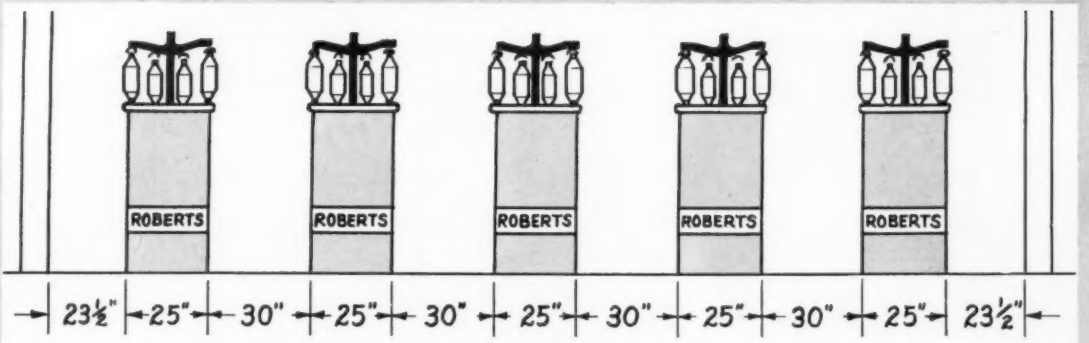
roller bearing and the 7 millionth tension pulley of this company.

We had planned to run a couple more booth pictures from this good show as they were sent on by good advertisers, but one booth was so

(Continued on page 12)

NEW! ROBERTS 25 SPINNING FRAME

- **25 inches wide**
- **25% more yarn from same floor space**
- **25% less building for same production**
- **25% saving in building and utility cost**



5 frames in a typical 25 foot bay—25 inch frames, 30 inch aisles

TRIED AND PROVEN. The Roberts 25 Spinning Frame is simple and straightforward, free from radical innovations or gadgets. It embodies all the tried and proven features most wanted in a modern spinning frame giving highest production and lowest maintenance.

ROBERTS DRAFTING. Roberts Double-Apron Drafting produces highest break factors, best yarn evenness and lowest ends down in a range of drafts from 10 to 60, for yarn numbers from 2's to 100's, in cotton, synthetics or blends.

SMALL, MEDIUM OR LARGE PACKAGES. The Roberts 25 Spinning Frame is available in gauges from 3 inches to 4½ inches and can be arranged for direct filling on 8 or 8¾ inch quills or for warp up to a 3 inch ring and 12 inch bobbin.

ALL BALL BEARING HEAD. The all ball bearing head design is outstanding in its simplicity and flexibility. Thirty greased-for-life ball bearings of one size are used and all plain bearings and studs eliminated. All gears in the head are hardened and have one pitch, one width, one bore and one size key, making them completely interchangeable. Two wrench sizes fit all shafts and tightening points. Draft Constant can be varied simply from 400 to 3200 and Lay adjusted for coarse or fine numbers by a simple gear change.

STANDARD FEATURES

Included as standard equipment are Roberts Ball Bearing Spindles, Roberts built-in Suction Cleaning, Roberts AeroCreels and 8 inch Cylinder Drives.

COMPARE ALL 3

For high production, top yarn quality, large packages, low maintenance expense, dependability—and, at the lowest investment per spindle—Roberts Spinning is second to none in America today.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

Sonoco TUBES

WILL IMPROVE PRODUCTION and LOWER YOUR COSTS

All SONOCO textile tubes are made to meet your individual order and specific need. SONOCO research and product development have kept pace with today's modern, high-speed production methods. There are precision made tubes for all natural and synthetic yarns and cloth—for winding, twisting and other processes. SONOCO produces spiral, convolute, parallel and drawn tubes in sizes ⅛" to 36" I.D., in any length and wall thickness. Available in colors, various surfaces, treated, impregnated, perforated, scored, notched, printed and with crimped or burnished ends.

If you have a textile tube problem, consult with your SONOCO sales-engineer—or write us direct.

sonoco
PAPER CARRIERS

SONOCO PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.
GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

DEPENDABLE SOURCE OF SUPPLY

Do they both hold 4 aces?

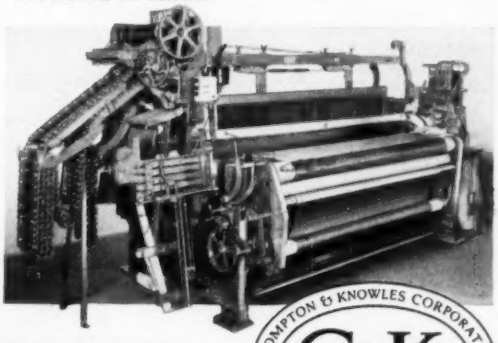
(...does Casey tell Trimble?)

No trick to it all. Of course they can *both* win . . . just as everybody wins . . . if they have a woolen or worsted weaveroom loaded with C & K's W3 and W3A Looms equipped with the unique and exclusive Select-A-Pic feature.

For no other looms can do what these looms can do . . . and that is to produce *automatically* pick-and-pick fabrics like plaids and splashes which . . . on any other types of looms . . . can only be woven *non-automatically*.

PROOF: Over 600 Select-A-Pic Looms are now in daily operation, and have been for some time. In that time, 11 customers reordered once . . . three customers placed 3 repeat orders each . . . two customers reordered 4 times . . . one customer reordered 5 times . . . one customer reordered 9 times . . . and so on down the long list.

REPEAT: There's no proof of performance like repeat orders. And if you want to see what brings in these repeat orders, *come see C & K's Select-A-Pic Looms in action.*

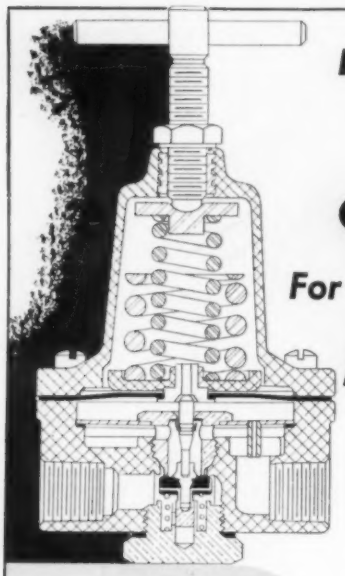


CROMPTON & KNOWLES *Corporation*

WORCESTER 1, MASSACHUSETTS, U.S.A.

Charlotte, N. C. • Philadelphia, Pa. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.
Crompton & Knowles of Canada, Ltd., Montreal, Quebec

CROMPTON & KNOWLES CORPORATION C&K WORCESTER, MASS. U.S.A.



How Norgren

HIGH PERFORMANCE PRESSURE REGULATORS

For TEXTILE MILLS

Provide Accurate, Dependable Control of Air Pressure...

1. PRESSURE KEPT CONSTANT
Quick response to sudden demands for greater air volume.

2. EFFICIENT OPERATION
Greater air flow with less pressure drop.

3. PRECISION CONSTRUCTION
Provides accurate pressure regulation under the most rugged conditions.

4. RELIEVING FEATURE
Safeguards connected equipment against damage due to pressure surges.

5. RUGGED DIAPHRAGM
Made of oil resistant synthetic rubber reinforced with nylon fabric.

6. EASY TO INSTALL
Pipe connections are in line.

NORGREN AIR PRESSURE REGULATORS, RELIEVING
Relieving feature provides added protection against excessive pressure build-up. Permits downward adjustment of pressure without "bleeding" of line. Maximum allowable primary pressure is 400 psi; adjustable delivery pressure is 2 to 250 psi. Pipe sizes—⅛" to 1" inclusive. Series 2AX.

NORGREN AIR PRESSURE REGULATORS, STANDARD
Maximum allowable primary pressure is 400 psi; adjustable delivery pressure is 2 to 250 psi. Pipe sizes—⅛" to 1" inclusive. Series 2A.

NORGREN AIR PRESSURE REGULATORS, PRECISION
For precise control of air pressure in the range of 0 to 2 cfm. Specially suited for use with air-controlled instruments. Maximum allowable primary pressure is 400 psi; adjustable delivery pressure is 1 to 30 psi. Relieving type. Pipe size—¼" Series 11,400.

NORGREN AIR PRESSURE REGULATORS, PILOT-CONTOLLED
A precisely controlled air cushion provides an extended adjustable range, more accurate pressure regulation, increased capacity in cfm. Maximum allowable primary pressure is 400 psi; adjustable delivery pressure is 2 to 100 psi. Pipe sizes—¼", ¾", 1", 2". Series 20AA.

CALL YOUR NEARBY NORGREN REPRESENTATIVE LISTED IN YOUR TELEPHONE DIRECTORY — or
WRITE FOR NEW CATALOG

C.A. Norgren CO.

3454 South Elati Street, Englewood, Colorado

Wherever Air is Used in Industry

Shorts and Remnants

(Continued from page 8)

crowded on the photo that you couldn't see the machinery — the second was taken at dead of night without an onlooker. The two are big competitors, so we won't make either look bad.

Their equipment was in the Mid-November TI ANNUAL EQUIPMENT PARADE & BUYER'S GUIDE anyway, and don't let that issue get away. It's a good one to use throughout the year.

"Kickbacks on Textile Chemicals"

Presenting both sides of the Kickback situation in Oct. and Nov., articles draw further comments. One reader writes:

". . . I do feel that there is a large segment of the industry where no bribery exists or would be tolerated, but I am equally convinced that those who are the worst offenders would be first to deny that any such condition exists. In some instances, and I do know of a few specific examples, the people who accept kickbacks are convinced that there is no wrong doing in their actions. This is quite natural in human nature; the scribes and Pharisees were among the most dedicated men of their time and were confident, I'm sure, that the Lord was on their side. . ."

At least three readers identified the **Spencer Love** philosophy quoted in Oct. by one sales manager as actually coming from John Ruskin (the cigar man?). This quote was:

". . . There is nothing in the world that some one cannot make a little bit cheaper and sell for a little bit less, but he who thinks of price alone is that man's lawful prey."

► Our friend **Harry C. Coley,** board chairman & treas., Howard Bros. Mfg. Co., Worcester, Mass., took a trip this summer down the Ohio and up the Mississippi from Cincinnati to St. Paul. It was repeating his first job more than 50 years ago when he served as a "flunky" cook on the river steamer J. M. Richtman out of St. Paul. Then he got paid $15 a week. This time he paid.

► *A New York Times* ad features a "Viscose Cotton" carpeting. Who says there is nothing new under the sun?

► Friends tell us of "Genuine American Imported" textiles being

(Continued on page 16)

Amerotron Corp. cites Bahnson research in air conditioning new plant

Bahnson Central Station "Year-Round" System fits exacting standards of modern Barnwell, S. C. woolen Mill

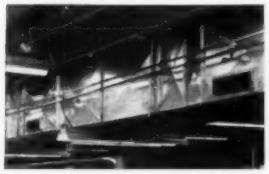
Amerotron Corporation's modern, integrated carded woolen mill recently completed at Barnwell, S. C.

Engineers and Architects: Lockwood Greene, New York, N. Y.
General Contractors: Daniel Construction Co., Greenville, S. C.

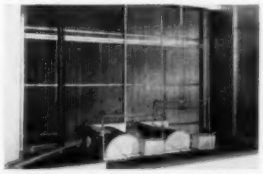
Air conditioning our new Barnwell, S. C. plant involved several principal considerations: our planned operating goals for this mill; Amerotron's special manufacturing processes; the modern design and construction of the plant; and our obligations to personnel and customers alike.

We feel that Bahnson's advanced engineering research and attention to our specific air conditioning requirements have successfully met those conditions. In our new plant, Bahnson's modern "Year Round" Central Station System contributes effectively to our aims for high quality production and operating efficiency.

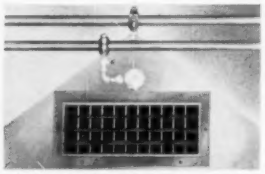
Amerotron Corporation



Modern Bahnson duct system, ceiling suspended, delivers saturated air under automatic control in proper proportion to the need. Custom designed, ductwork is quality built and securely connected for efficient air-handling. Bahnson type ESC Atomizers, mounted over discharge grilles, offer flexible supplementary humidification.



Bahnson Type B Suction Strainers in tank of Bahnson Type Y Air Washer automatically remove lint from re-circulated water and flush it away. Thus clogging of spray nozzles is prevented, and washer is kept operating at peak effectiveness. The Type Y Air Washer provides high saturation efficiency, requires minimum maintenance.



The self-cleaning pneumatic Type ESC Atomizer is a pioneering Bahnson design. For supplementary evaporation with the Central Station System, it provides fine spray quality with low compressed air consumption at economical operating cost. Electric or pneumatic modulating controls available for flexible regulation.

Special Bahnson adjustable grilles offer accurate directional control of air flow with four-way deflection. A removable core facilitates cleaning and allows access to duct interior. For even balancing and distribution, the wide, individually adjustable blades effectively direct air so that temperature and relative humidity are kept uniform throughout the conditioned area.

Bahnson engineering and research staffs offer you the experience and leadership of 40 years in air handling equipment design and manufacture. Your specific air conditioning needs receive top attention in the development of the finest system for application to your individual requirements.

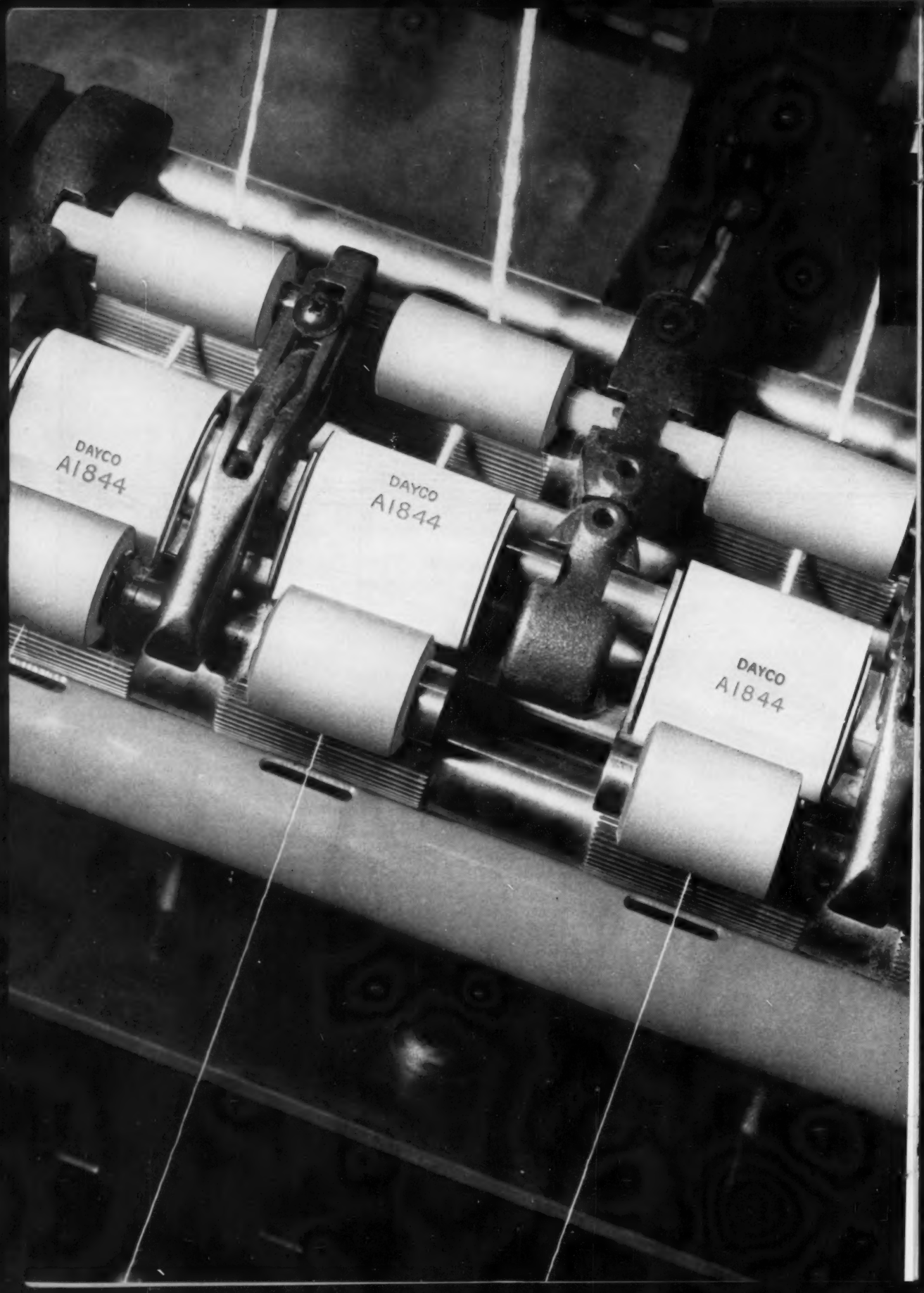
91 OF THE TOP 100

Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!

Bahnson
COMPANY
WINSTON-SALEM, N. C.

WRITE US TODAY
for detailed information.
Ask for Bulletin 22A.

AIR CONDITIONING • CLEANING • VACUUM COLLECTION


DAYCO
A1844
DAYCO
A1844
DAYCO
A1844

How new Dayco cots reduce lap-ups

caused by sweaty or gummy surface, static, and fiber adherence during shut downs.

The easiest way to reduce all four of the major causes of lap-ups is to install *all new* Dayco EW661 Cots. Here's why:

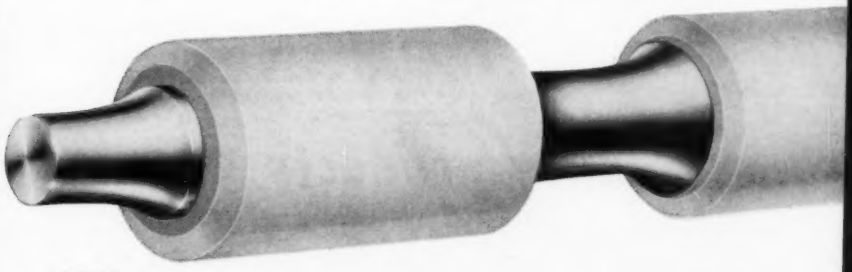
Some cots on hot, humid days collect a moisture film on their surface. Fibers adhere momentarily — and lap-ups slow production — cause inferior yarn quality. The new EVERGREEN compounds in Dayco EW661 Cots, however, resist fiber adherence—a major cause on lap-ups. It's as simple as that.

If the problem of gummy, sticky cots bothers you, new Dayco EW661 Cots are the answer. New EVERGREEN compounds always maintain their constantly correct, co-efficient of friction. They contain no substances to soften under the hottest, most humid conditions.

Frictional static build-up in ordinary cots attracts fibers to cause lap-ups. Dayco EW661 Cots, however, actually dissipate static electricity. Special compounding makes this possible, eliminating one more cause of lap-ups.

Finally, new Dayco EW661 Cots assure quick Monday morning starts. Compounded of materials which stubbornly resist chemicals or oils, Daycos are ready to instantly resume quality drafting after week-end shut down.

Complete elimination of lap-ups is an ideal situation which cots alone cannot assure. However, to move nearer spinning perfection, install new Dayco EW661 Cots on your frames. You'll increase yarn quality and production . . . reduce waste. For immediate facts write *The Dayton Rubber Company, Textile Division, 401 S. C. National Bank Bldg., Greenville, S. C.*



© D. R. 1956

Dayton Rubber

Dayco and Thorobred Products for better spinning and weaving.

Her work would be better...

if the warp threads were sized with Clinton starches

You can count on Clinton starches to do a consistently good sizing job on every warp thread . . . to make your weaving easier, better.

Clinton starches give you the dependable quality that makes yarns weave at high efficiencies . . . turn out first rate textiles that'll pass the most discriminating inspector's final check. In fact, many mills use Clinton starches as a standard of comparison. They increase warp strength to easily withstand abrasion . . . reduce friction . . . smooth fuzzy fibres. Clinton starches give your fabrics proper crispness and body when used in the finishing process too.

Choose Clinton starches. You can depend on them . . . warp after warp after warp.

and remember technical service in connection with your specific problems is available upon request.

Quality products

FROM THE WORLD'S CORN CENTER

CLINTON

CLINTON CORN PROCESSING COMPANY
CLINTON, IOWA

Shorts and Remnants

(Continued from page 12)

featured in swank London shops. Did they see any Kaywoodie pipes?

► Speaking of England, we read where they are completing the first atomic power plant and have more planned. Rapidly dwindling coal reserves made a serious problem in Britain and here's the atom to the rescue. The song "Atomic Power" (remember Elvis) will not replace "God Save the King."

"Selvage Control" Patents

"You published an article regarding the fundamental workings concerning 'Selvage Control' (Sept. '56) . . . This is to advise that I hold exclusive patent rights. This patent was issued to me (Frank L. Nimmons) on January 25, 1955, as patent number 2,700,203. To avoid some individual or firm infringing on these patent rights you may wish to run another statement advising of the patent."

FRANK L. NIMMONS
Greenville, S. C.

► T.I. hereby credits Mr. Nimmons with the above patent; warns against infringements.

Nonwoven

"I am one of your subscribers. I wish to know something about nonwoven fabrics, such as its processings, its machinery, its market, etc. . . ."

HENRY LEUNG
Beacon, N. Y.

► One of the best folders on nonwoven fabrics is available from Goodyear Tire & Rubber Co., Chem. Div., Akron, O.; and machinery data are available from Curlator Corp., East Rochester, N. Y.

"Finisher Profits"

"Please furnish me with a copy of the article entitled 'Finisher Profits by Streamlining Operations' (June '56). . ."

GUY THOMPSON
United Merchants & Mfrs. Inc.
New York, N. Y.

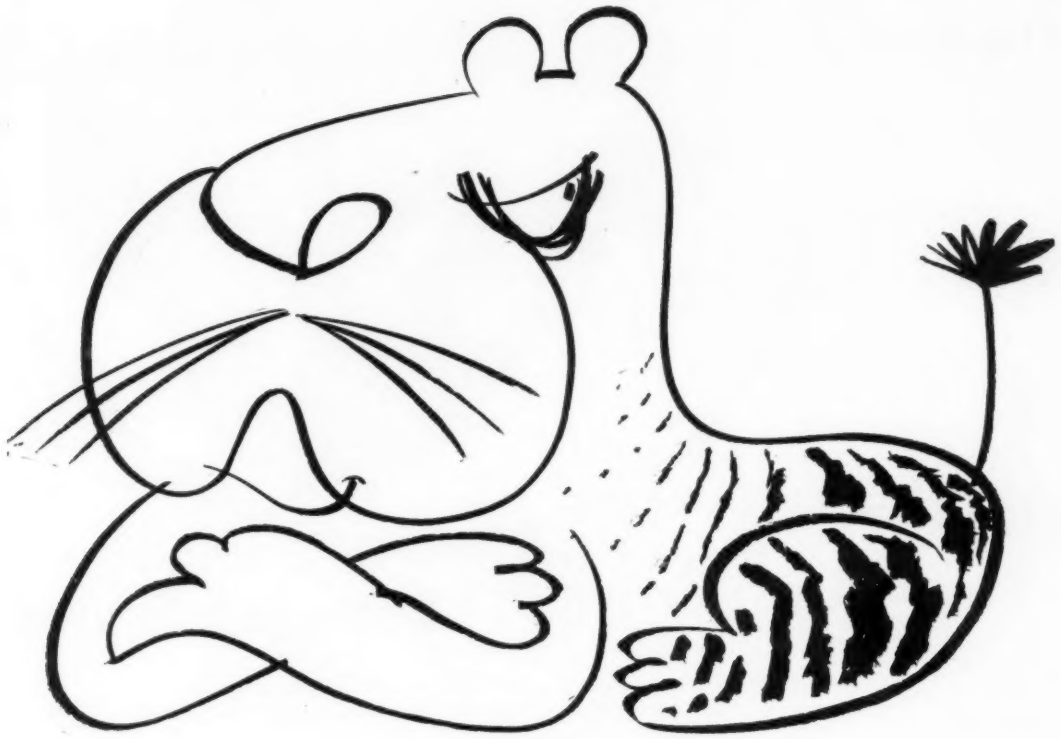
► Above article not reprinted.

Want to Buy

The warp dump truck ad on Fisher Mfg. Co., Oct. '56, got immediate requests from **R. G. Synan,** Sec. Hampton Looms, Bedford, Va., and **E. W. Blackwood,** Engr. Globe Mills Co. Mt. Holly, N. C. We don't know where they get that name but S. A. Texas, Ghent, Belgium, wants data on pre-

(Continued on page 20)

A tiger once looked very queer
'Cause the sun made his stripes disappear
But they never would fade
If the tiger were made
*Of Coloray rayon. That's clear!**



*SERIOUSLY—the sunfastness of Courtaulds' Coloray rayon fiber has never been equalled in such a wide color range. Eight Coloray colors refused to fade after 500 scorching hours of exposure to South Florida sunlight. Other "colorfast" colors are happy to resist fading after only 80 hours of exposure. *Here's fastness over six times better! All* Coloray colors offer many times the fastness customers expect—or even hope for. Consider what colorfast Coloray colors mean in sports clothes, draperies and convertible tops—to name just a few of the popular items made with Coloray. They mean *business!* Make sure you get your share.

COURTAULDS'

COLORAY

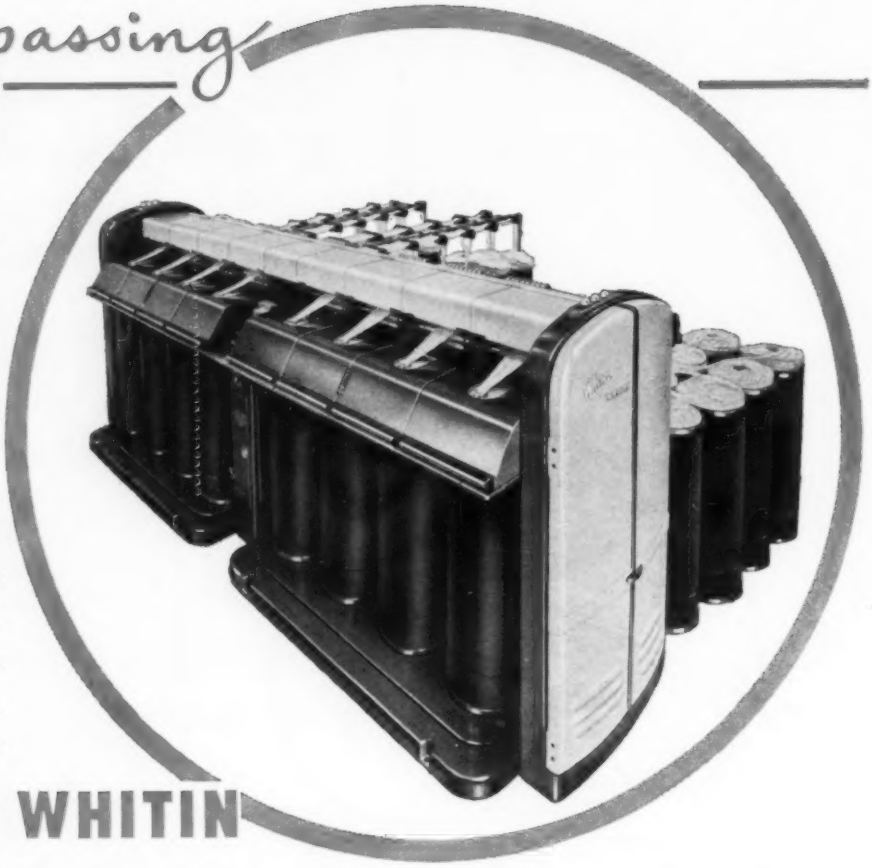
Rayon fiber with Captive Color. . . *"can't escape!"*

For further information, write:

COURTAULDS (ALABAMA) INC. • *First name in man-made fibers, first name in solution-dyeing*
600 FIFTH AVE., NEW YORK 20 • Greensboro, N. C. • Le Moyne Plant, Mobile, Ala.

Surpassing

all present-day standards of drawing . . . .the New WHITIN



EVEN-DRAFT* Drawing Frame

Seldom has any new textile machine had so pronounced an impact,—been so definitely successful — as the new Whitin Even-Draft Drawing Frame. In many large installations (up to 80 deliveries), mills report production doubled or tripled, sliver quality reaching levels formerly unattainable, and costs slashed to new lows. In short, all current standards for drawing have been completely surpassed by this new Whitin high production, precision-made textile machine.

From 250-300 feet per minute Front Roll Delivery

Production two to three times more than conventional machines, depending upon mill conditions and production needs.

For all fibers up to 3"

The first universal drawing frame — for cotton, spun synthetics and blends.

Outstanding Sliver Quality

Improved uniformity in both carded and combed sliver — 6 or 8 ends up.

Pneumafil Clearer Units

A brand new way of removing waste fibers. Developed for, and an integral part of, this machine.

Entirely New Design

Two independent four-delivery heads, vibration proof construction; precision tolerances; anti-friction bearings; unique four over five roll drafting; new overarm weighting; no-twist can table; electronic stop motions and signal lights; 14" — 15" — 16" cans, 36" or 42" high.

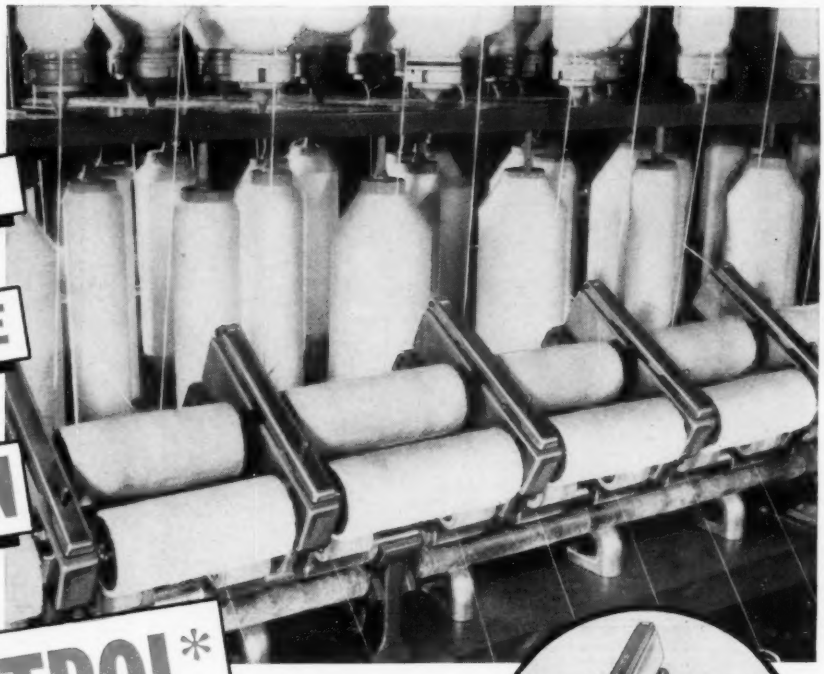
*TRADE MARK

WHITIN MACHINE WORKS FOR 125 YEARS SERVICE TO THE TEXTILE INDUSTRY 1831 - 1956

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

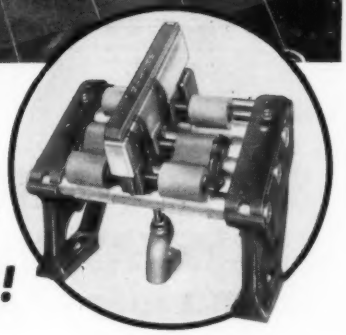


it's SIMPLE

it's ACCURATE

it's CLEAN

it's UNITROL*



Above — Mill installation of UNITROL.
Right — Detail of new unit and rolls.

. . . and only WHITIN has it!

Whitin's new UNITROL** Center Suspension Weighting Unit and new top rolls for spinning provides maximum performance and yarn quality combined with new lows in cleaning, maintenance, lubrication and spinning costs. It is standard on Whitin spinning frames and available for change-overs. UNITROL has been thoroughly tested in large mill installations.

* New Center Suspension Weighting Unit and New Top Rolls for Spinning

- **True precision construction**
- **Pre-set internal spring weighting**
- **No levers, saddles or dead weights**
- **Picking reduced 95%**
- **Run out — .001" or less**
- **Whitin anti-friction front rolls; non-lubricated middle and back rolls — all new in design**
- **Complete lint exclusion and grease retention**
- **Smoothly streamlined**

WHITIN MACHINE WORKS FOR 125 YEARS ONE COMPANY WITH ONE PURPOSE SERVICE TO THE TEXTILE INDUSTRY 1831-1956

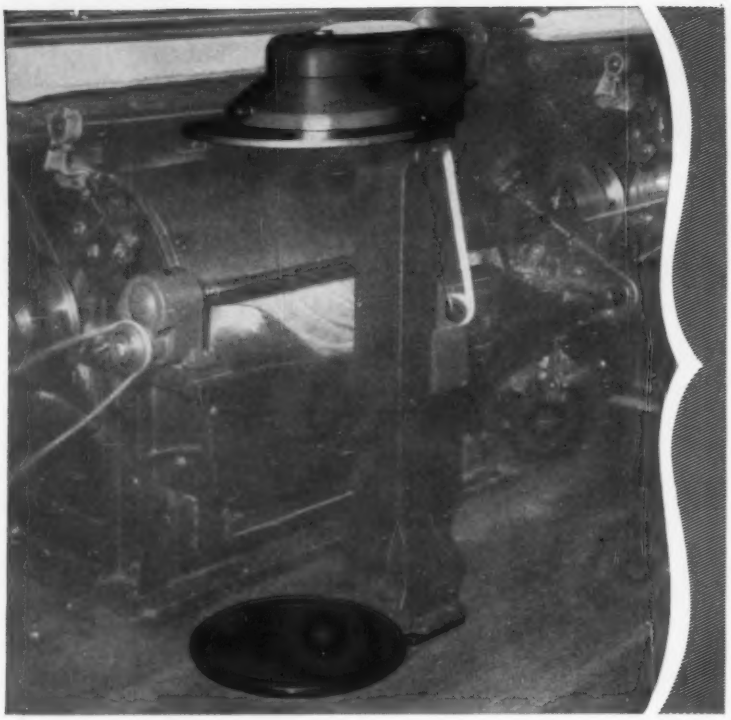
Write today for complete information

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, N. C. • DEXTER, ME.

** TRADE MARK



SOUTHERN STATES' NEW COILER HEAD AND BASE MAKE CONVERSION TO LARGER CANS SELF-PAYING

For mills seeking a low initial cost for conversion to larger cans, Southern States' new conversion unit is the answer. It consists of: 1) the identical, vastly improved ball bearing head used on the new complete coiler; 2) an adapter spacer and upright shaft for increased coiler height necessary to accommodate 36" or 42" cans; and 3) a new, standard-type base assembly with a conventional gear system for driving the can table. All necessary components are furnished in kit form for quick installation, *using your existing stands.*

Southern States' Conversion Units are designed for use on any make cotton card and for accommodating cans of larger diameter.

Case histories of mills prove conclusively that Southern States' conversions are so economical they soon pay for themselves. For a small initial investment, you enjoy all the advantages of more efficient handling; lower operating costs; improved quality; simplified oiling; ease of maintenance; smaller parts inventory; and years of satisfactory service.

Get full facts from your Southern States representative or write direct to us for Technical Bulletin No. 203-a.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Shorts and Remnants

(Continued from page 16)

packaging machinery (Sept. '56). P. Tejidos Leticia Ltda, Medellin, Colombia, wants tufting machinery. **A. W. Mante,** Supt., Packard Mills, Caryville, Mass. is interested in Exact Weight scales shown in their Oct. page ad. Etc., etc.,

► **Wm. D. Messner** (below), Overseer weave-slash, Geneva (Ala.) Mills, likes the series on "Warp Sizing" by Dr. Paul Seydel as he points out o-

pening article to **Paul Jones** (standing) Industrial Supply Co., LaGrange, Ga.

Article No. 8 in this series (the best ever done on warp sizing) is being run currently. Plans are to reprint in book form upon completion next year. Early orders for this book come from **Ernest J. Chornyei,** Mgr. Bradford Dyeing Assn. (USA), Westerly, R. I. and **C. R. Teichgraber,** Supervisor Doml. Ltd., Montreal, Que., Can. "Institute Cotoneria Italiano," Milan, Italy, wants to reprint it.

► We get around. *Textile Labor,* published by the TWUA, quotes us on the Truitt Mfg. Co. case (July '56) where the Supreme Court rules that said Co. erred in not letting union look at its books. We said humorously that the employer should then have the right to visit the employee homes before granting wage increases — to see if they need same. *Textile Labor* says, "On behalf of TWUA members, be our guest."

► Collected at Greenville Show, one sign saying "If you can keep your head in all this confusion it shows that you do not understand the situation."

► Merry Xmas to all!

Personal NOTES

ABOUT MEN YOU KNOW

Former president and a director of Textile Research Institute, and vice-president of Alexander Smith & Sons prior to the merger with Mohawk Carpet Co., **A. G. Ashcroft,** has become affiliated with Arthur D. Little, Inc., in a sales and consultation capacity, filling a newly-created position.

New chief, purchasing division, military clothing and technical supply agency at Philadelphia Quartermaster Depot, succeeding Col. Alfred M. Koster, is **Col. James E. Baker,** who recently returned from a tour of duty in Japan.

Edmund M. Buras, Jr., formerly chemist in charge of the chemical modification unit at Southern Re-

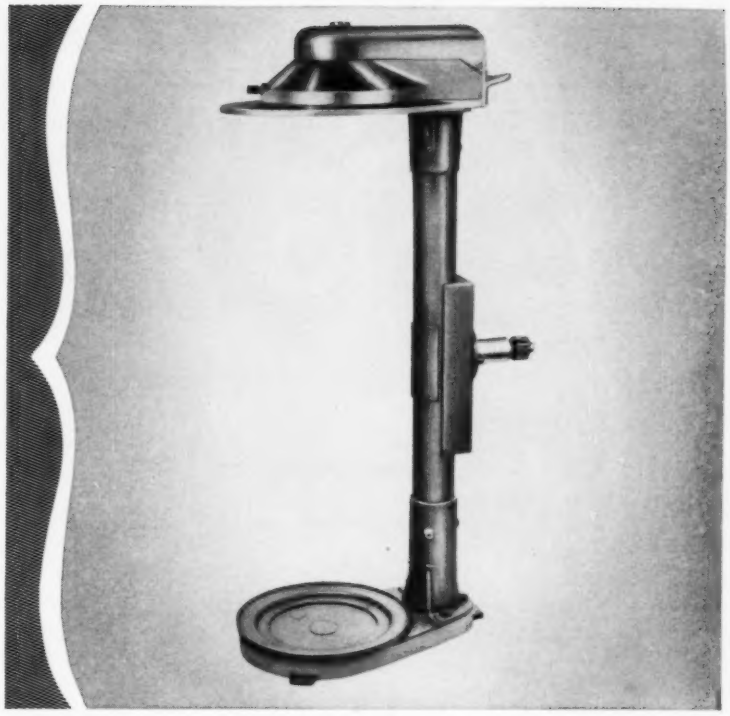
Mr. Buras

gional Research Laboratory, New Orleans, is now research associate at Harris Research Laboratories, Washington, D. C.

Ben R. Eckstein, formerly general manager of Mojud Co., New York, N. Y., now holds the same position at Alamac Knitting Mills, Indian Orchard, Mass.

W. H. Fann has been named manager of the Slater, S. C., plant of the synthetics division of J. P. Stevens & Co., Inc. Formerly in charge of the Slater operation, Mr. Fann is returning in a similar capacity. * * * **J. M. Moody,** veteran carder at the Monaghan plant, Greenville, S. C., has retired after 48 years of service.

Dr. A. N. J. Heyn, Clemson College professor of Natural and Synthetic Fibers, has been elected a Fellow of the American Association for the Advancement of Science. He was also recently presented membership in



SOUTHERN STATES' NEW COILER LINE HAS ALL ENGINEERING AND DESIGN FEATURES WANTED BY MILL MEN

Name the features you desire most and you will find them on Southern States' vastly improved coilers. To provide mills with a truly premium-quality coiler, every engineering and design feature wanted by mill men has been included.

Here are some of them: available for all can sizes . . . ball bearing throughout—head, shaft, and can table . . . cut tooth gears throughout . . . head and base may be rotated . . . strong tubular steel stand . . . precision-ground calender rolls . . . self-aligning pillow blocks on upright and calender roll shafts . . . fully adjustable can table . . . quickly detached coil spring roll-loading device. Others are fully described in our technical bulletin.

Southern States Coilers are designed for direct attachment to any make of card, left or right hand. Installation is rapid and economical.

Your mill can profit by this coiler that is quality-built throughout to operate at peak performance, with minimum maintenance, for years.

Get the facts from your Southern States representative or write direct to us for Technical Bulletin 203-a.

SS

SOUTHERN STATES

EQUIPMENT CORP.

HAMPTON, GEORGIA

Stop hand oiling start increasing production with BIJUR AUTOMATIC LUBRICATION

Hand lubrication of textile machinery is obsolete. Leading textile mills, following the trend toward greater automation, have switched to automatic lubrication.

Bijur Automatic Lubrication makes costly, laborious, hand oiling a thing of the past. It insures more production from every machine by doing away with the major cause of textile machinery breakdowns—faulty lubrication. And still more productive time is added by eliminating down-time for hand oiling. Every bearing, even the most inaccessible, is fed the right quantity of oil at the right time.

Savings in oil consumption can exceed 50%. Work spoilage is avoided. Danger of fire is reduced and causes of accidents are removed. When you eliminate outmoded methods of lubrication, you will see immediate results in dollars-and-cents. 1032

Colorful, new bulletin, "From Fibre to Fabric," shows the practical benefit that Bijur Automatic Lubrication offers to the Textile Industry. Write for your copy.

BIJUR LUBRICATING CORPORATION
Rochelle Park, New Jersey

Pioneers in Automatic Lubrication

67

Personal NOTES ABOUT MEN YOU KNOW

the New York Academy of Science and named to "American Men of Science" and "Leaders of Science in the South."

John Richard Fulp, Jr., of Anderson, S. C., has been elected assistant vice-president and a member of the board of directors of Abney Mills, Greenwood, S. C.

Robert A. Harper has been elected president of Columbia Mills, Inc., Minetto, N. Y., to succeed the late Edward F. O'Reilly.

Robert S. Kilborne, III, merchandise manager of the men's wear division and assistant treasurer of William Skinner & Sons, Holyoke, Mass., together with **W. R. Proud,** assistant sales manager, women's wear division, recently drove from New York to French Lick, Ind., in a 1911 Pierce Arrow sports touring car to

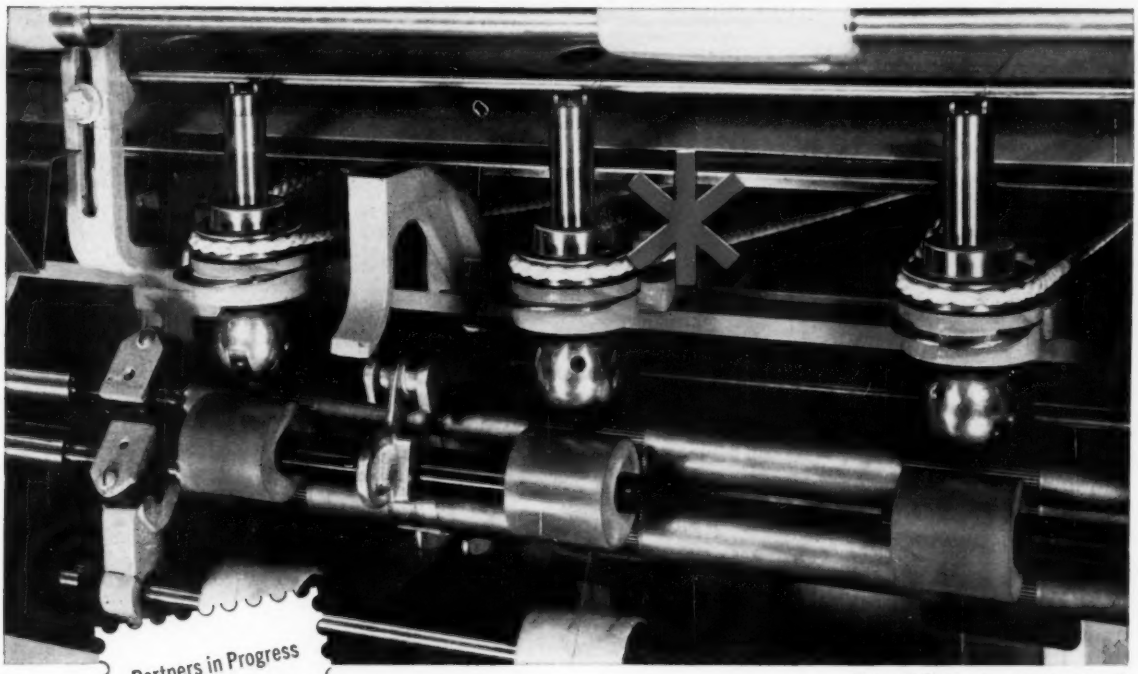
participate in the eleventh annual revival of the Glidden Tour . . . a tour sponsored by the AAA, and other automobile associations, to prove the reliability of antique automobiles. Coinciding with this event, Coral Records has issued the first song written by Mr. Kilbourne, a "jump" tune called "Black Jack," with a folk theme.

Filling the newly created post of executive vice-president at La France Industries, New York City, is **Henry Hafner** who will supervise fabric development, merchandising, and styling. He was previously president of the former Hafner Associates.

A. E. Hopkins is acting superintendent of the Sherbrooke, Quebec, yarn division of Bruck Mills, Ltd., during the illness of Frank Crossley.

A. Frank Kelly, who has been identified with a number of synthetic spinning and weaving mills in the South, is now general manager of the

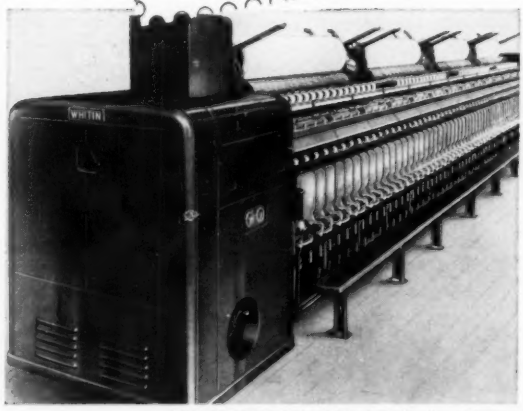
DESIGN FEATURES LIKE THIS



New *Ball Bearing* Twister Head

Partners in Progress
WHITIN
33 years
FAFNIR

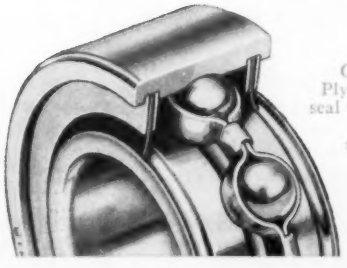
keep quality up, costs down in wool ring spinning



Whitin Flex-Spin Wool Spinning Frame

By incorporating Fafnir Ball Bearings in the improved twister head construction of the Flex-Spin Wool Spinning Frame, Whitin engineers extended materially the service life of the pulley bands. The uniform low torque of Fafnir precision bearings assures smooth, uninterrupted transmission of power to the nippers. Other advantages include . . . practically no maintenance and positively no oil drip. The Fafnir bearings involved are the wide type, single-row ball bearings with Plya-Seals. The patented Plya-Seals are regarded as the most effective contact-type seals available for keeping lubricant in, contaminants out.

By collaborating with the designers of textile machinery over the years, Fafnir has accumulated a fund of first-hand knowledge and experience in bearing application on textile machinery. Perhaps this knowledge and experience may be useful to you when you're working on new machines. For further information contact The Fafnir Bearing Company, New Britain, Conn.



On wide-type Fafnir Plya-Seal Bearings, the seal washer is assembled between two split steel retaining rings. The seal grooves are brought in from faces.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

this "Buffalo" pump moves your acids on rubber

"Buffalo" Rubber-Lined Pump with upper half of casing removed.

—REDUCING COSTLY DOWN-TIME

—ELIMINATING EXCESSIVE REPLACEMENTS

If you are pumping highly corrosive liquids, or liquids containing abrasive solids, you may be paying the high price of short pump life. However, where such severe service destroys ordinary pumps in a hurry, "Buffalo" has the answer: *what acids can't touch, they can't hurt.* And in this "Buffalo" Pump, the liquid contacts nothing but rubber, vulcanized to the impeller and passages.

Pump life is multiplied many times and the cost of rubber lining is negligible when compared to the savings in down-time and replacements. Have us mail you Bulletin 982 — see this and the other "Q" Factor* features that save you money and troubles when you specify "Buffalo" Chemical Pumps.

**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

"Buffalo" PUMPS

BUFFALO PUMPS

DIVISION OF BUFFALO FORGE CO.

175 Mortimer Street Buffalo, N. Y.

Canada Pumps, Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

Personal NOTES ABOUT MEN YOU KNOW

manufacturing division of Associated Textiles of Canada Ltd., Louiseville, Quebec.

Former technical sales representative in southern New England for Althouse Chemical Co., **Fred C. Kinch** now fills the new position as assistant superintendent at the synthetics finishing plant of Kenyon (R. I.) Piece Dye Works.

Ed Lipscomb, director of sales promotion and public relations for the National Cotton Council, has been appointed chairman of a public relations committee for a White House project designed to create better understanding, world-wide.

New plant engineer for P. H. Hanes Knitting Co., Winston-Salem, N. C., is **Wilbur M. Lockrow,** of St. Petersburg, Fla.

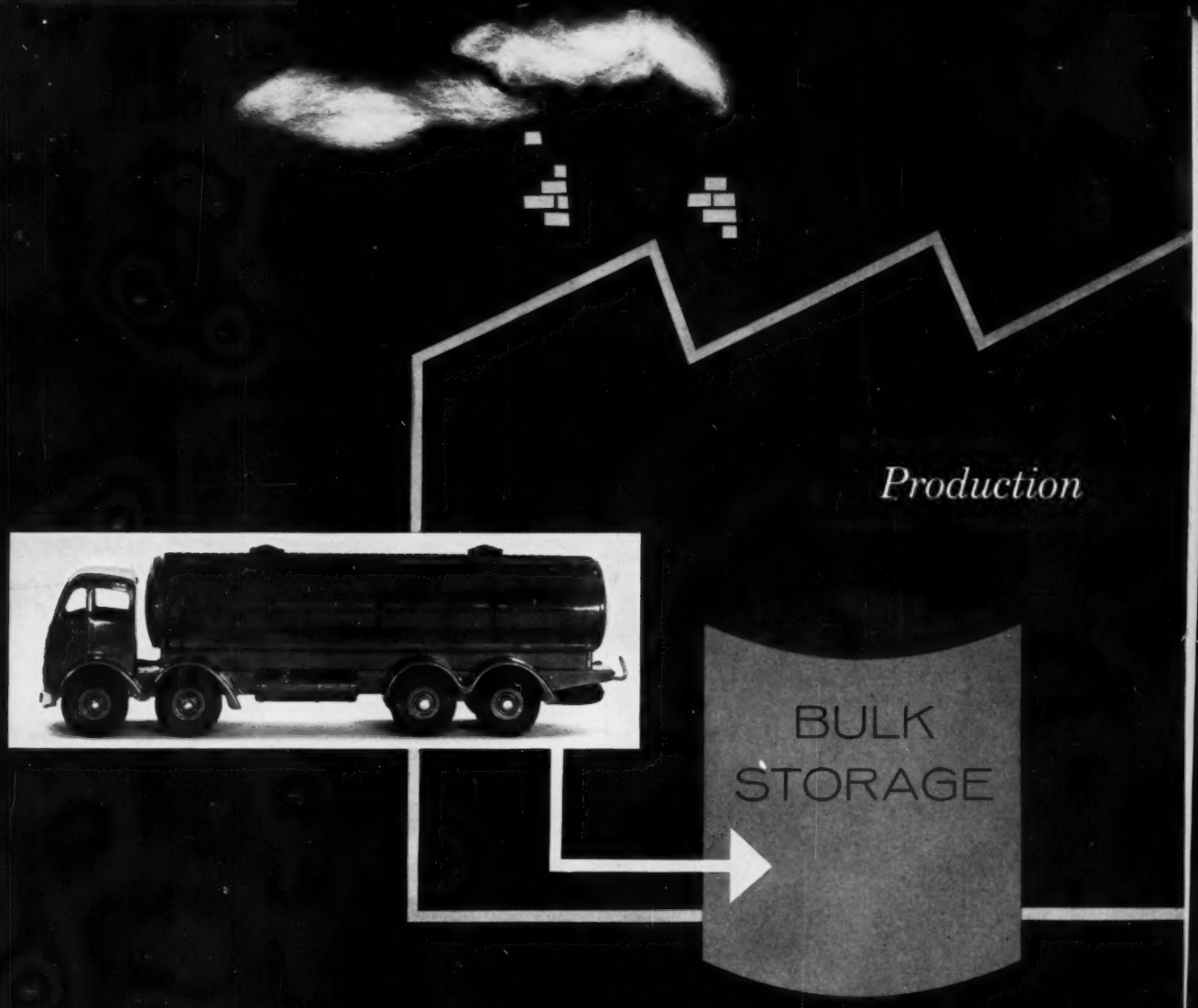
Recently appointed instructor in weaving and design at the A. French Textile School of the Georgia Institute of Technology, Atlanta, Ga., was **Bomar A. Olds, Jr.,** who came to the school from the Lumite Division of Chicopee Mfg. Corp. in Cornelia, Ga.

Mr. Olds

Maurice H. Masland, Jr., has retired as vice-president of C. H. Masland & Sons, Carlisle, Pa., manufacturers of rugs and carpets, but will continue to serve as a member of the board of directors. He has moved to his Florida home, Pelican Point, Fort Myers Beach, with his wife and daughter.

Dexie M. R. Mills, formerly manager of the Dalton, Ga., operation of E. T. Barwick Mills, is now standards manager at Fulton Bag & Cotton Mills, Atlanta, Ga.

Sidney T. Perkins, formerly with the cotton department at Dan River



Cut your finishing costs . . . buy Resloom* resins in BULK

Adapt your receiving system to profit from the economy and convenience of bulk deliveries

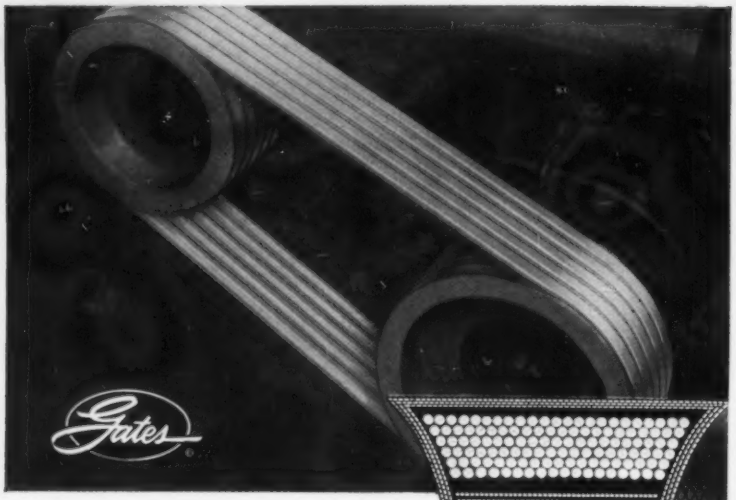
MONSANTO

*RESLOOM: REG. U. S. PAT. OFF.

There are two ways you can take advantage of the lower, bulk prices of Resloom finishing resins. One is to install a permanent tank storage installation. The other way is through a temporary receiving system—you buy in bulk and drum the material right at your own plant as you need it. Any installation expense can soon be offset by the sharp difference in material costs.

Many finishing plants are saving this way—and profiting from another Monsanto bulk convenience: finishing resin and catalyst delivered in one combination truck or tankcar-load—at bulk prices for each!

This Monsanto special textile service is part of a program which includes extensive—and productive—research in creating new finishing resins to meet the challenge of the many new fabrics and blends. Draw on Monsanto textile service. Write to Monsanto Chemical Company, Plastics Division, Room 1041, Springfield 2, Massachusetts.



Concave sides make V-belts last longer

The sides of every Gates V-belt (Fig. 1) are concave—a precisely engineered curve that greatly increases V-belt life. Here's why:

On the bend around the sheave, the concave sides of a Gates V-belt fill out and become straight (Fig. 1-A). Thus the belt makes full contact with the sides of the sheave, grips the sheave evenly, and wear is distributed evenly across the sides of the belt. Uniform wear lengthens belt life; keeps costs down.

Make this simple test

Take a straight-sided belt (Fig. 2) and bend it. Feel the sides at the bend; they bulge out. Now picture this bulge in the sheave groove (Fig. 2-A). It is easy to see that the belt makes uneven contact at points indicated by arrows. Naturally, wear is greater at these points. Uneven wear shortens belt life; increases belt costs.

Cut down-time and V-belt replacement costs. Specify belts that grip evenly and wear longer . . . specify Gates Vulco Rope—the V-belt with concave sides. There is a Gates distributor nearby who will quickly supply the belts you need. The Gates Rubber Co., Denver, Colorado

—World's Largest Maker of V-Belts

TPA 88

Gates Vulco Rope Drives

Personal NOTES ABOUT MEN YOU KNOW

Mills, Inc., Danville, Va., now heads cotton operations at the firm's Anchor Rome (Ga.) Mills, replacing Walter Clarke, who has resigned.

New general plant manager for A. Schottland, Inc., rayon mill at Rocky Mount, N. C., is **Don Rich,** who was formerly with Brandon rayon plant of Abney Mills, Greenville, S. C.

Frank O. Robertson has been made assistant foreman of all the operations of the preparation department at Union Bleachery, Greenville, S. C. He was formerly in charge of all open-width bleaching preparation. * * * **Joe N. Stinson** has been promoted to the position of assistant foreman in the dye department.

W. Ray Shockley, former member of the staff of The Atlanta (Ga.) Journal, has joined the public relations staff of the American Cotton Manufacturers Institute, Inc. With headquarters in Atlanta, Mr. Shockley's duties will be concerned primarily with the textile industry of

Mr. Shockley

Georgia, but as a member of the ACMI staff, he will also deal with the entire textile industry. * * * **Harry P. Snyder,** who has been with the Associated Press for nearly 20 years, has accepted a position on the public relations staff, with headquarters in Washington, D. C.

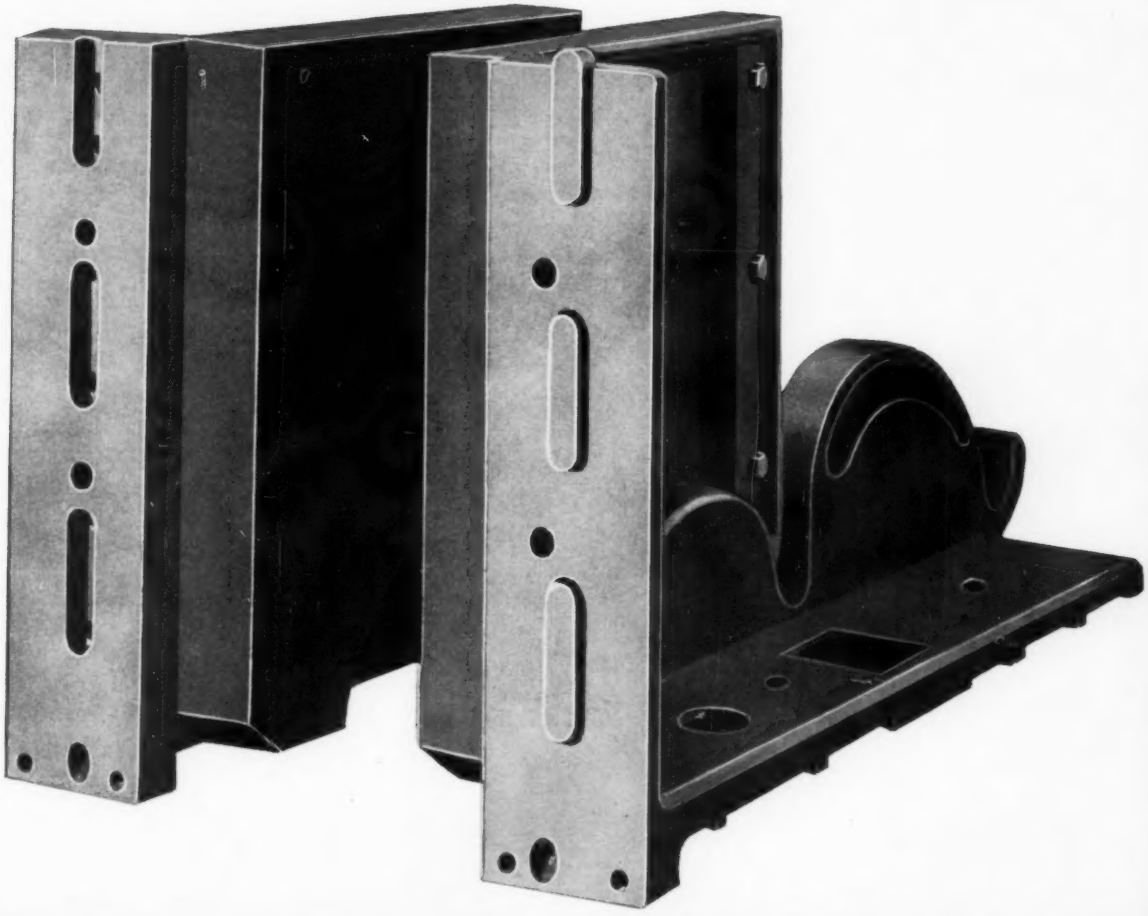
Now superintendent of the woolen division of Paton Mfg. Co., Ltd., Sherbrooke, Quebec, is **Roger Smith,** who was superintendent of the Franklin, N. H., mill of J. P. Stevens & Co., Inc.

A change in management of the Modena plant of Burlington Industries, Inc., in Gastonia, N. C., has been announced. **John Williams,** for-

(Continued on page 30)

Need New Pickers?

. . . then, think of what you get in ALDRICH PICKERS!



To make a good lap, it is important to keep the vertical calender rolls parallel so that they make perfect contact from end-to-end.

Stick a crowbar in one of your calender rolls and see how much you can wiggle it sideways. When the rolls do not make line contact, the lap is pressed too much in the center and not enough at the selvages, which will be puffy.

Note how the Aldrich lap cheeks are recessed for adjustable gibs, which are held in place against the calender roll bearings by set screws with lock nuts.

The Aldrich calender roll bearings are identical within very close limits, and when held firmly in place with the adjustable gibs, assure line contact between the rolls, and proper calendering.

AldricH MachinE WorkS

Greenwood, South Carolina

Not a lap-up in sight!

ARMSTRONG J-490 ACCOTEX COTS ARE THE REASON; THEY'VE GOT BUILT-IN LAP RESISTANCE

With Armstrong J-490 Accotex® Cots, you can practically eliminate front-roll laps—and turn out strong, uniform yarn year after year. That's true whether you're spinning natural fibers, synthetics, or blends.

Here's why. J-490 Cots are made of a patented synthetic rubber material that effectively neutralizes the normal electrical attraction between roll cover and fiber. The J-490's built-in electrolytes actually tend to repel broken ends, preventing them from lapping.

The clean-running J-490's won't pull fibers from roving and cause excessive ends down, either. Short fibers won't build up on these cots because the J-490 compound contains no fillers that can roughen the drafting surface.

For more information about Accotex J-490 Cots and other Armstrong textile products, write Armstrong Cork Company, Industrial Division, 6512 Ivy St., Lancaster, Pa.

P. S. Where high static aggravates the lapping problem on spinning and card room frames, Armstrong offers a new group of anti-static compounds. These new materials have electrolytes PLUS anti-static agents which carry off static charges continuously. This prevents such charges from building up on the yarn or drafting surfaces. Your Armstrong man will be glad to give you more details about these new compounds.

Armstrong ACCOTEX COTS

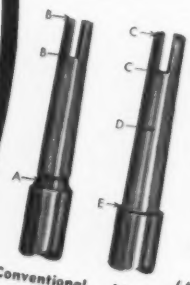
. . . used wherever performance counts

2 new products to improve machine performance

New Lifting Rods won't hang or warp

These Ideal Lifting Rods have a "super-slick" polish which prevents sticking in bushings. Will solve your sticking and shaking problems and outlast other lifting rods. Plain or induction hardened, with machined or new type ground tops — held to tolerances of ± .001". New bushings, shoes, and reamers furnished if desired.

New Type Roving Spindles



Conventional Ideal (A) Catches Lint (B) Square

Prevent collection of fibres
Fit barrel hubs perfectly
Last longer

New type shoulder (E), induction hardened, increases the life of the flyer hub (D). Precision ground to factory specifications. Tolerances held to ± .0005. Rounded corners and slots (C) are a great improvement over conventional roving spindles, and pay dividends in better work and longer service. This new design top can also be had on reworked spindles, with tops and feet hardened to withstand wear. In frame lots—from $1.80.

Write for further information and prices on these and other Ideal lines.

Flyer Reconditioning Service
Flyer Tune-up Service
Top Roll Reconditioning
New and Reworked Pressers

Ideal Machine Shops, Inc., Bessemer City, N. C.

Continuous Service to Textile Mills Since 1925

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 26)

mer Modena superintendent, has transferred to company headquarters in Greensboro, N. C., to assume the post of assistant to the division manager. He is succeeded in Gastonia by **Alex James,** who has been serving as assistant to the division manager.

Wade H. Shuford, Jr., of Hickory, N. C., has been elected president of Bothwell Mills of Newton, N. C., succeeding **R. L. Bothwell** who is now treasurer and general manager. Through purchase of stock, Mr. Shuford has acquired half interest in the mills.

H. Gordon Smith, executive vice-president of United States Rubber Co., has retired from active duty, and will reside in Thomson, Ga.

Eight years after his retirement, British-born **Fred Taylor,** one-time Clemson (S. C.) College professor of the textile school, this year received an honorary Master of Science de-

Mr. Taylor

gree, citing a 40-year record of federal service, from his alma mater, New Bedford Textile Institute, and honoring him for world contributions in textiles, agriculture, aviation, and industry.

Elbert Tripp has been transferred from The Seminole Mills, Statesville, N. C., to the Virginia Woolen Co., Winchester, Va., as technical superintendent. **B. C. Shults, Sr.,** formerly associated with Klopman Mills, Inc., has joined the firm as industrial engineer.

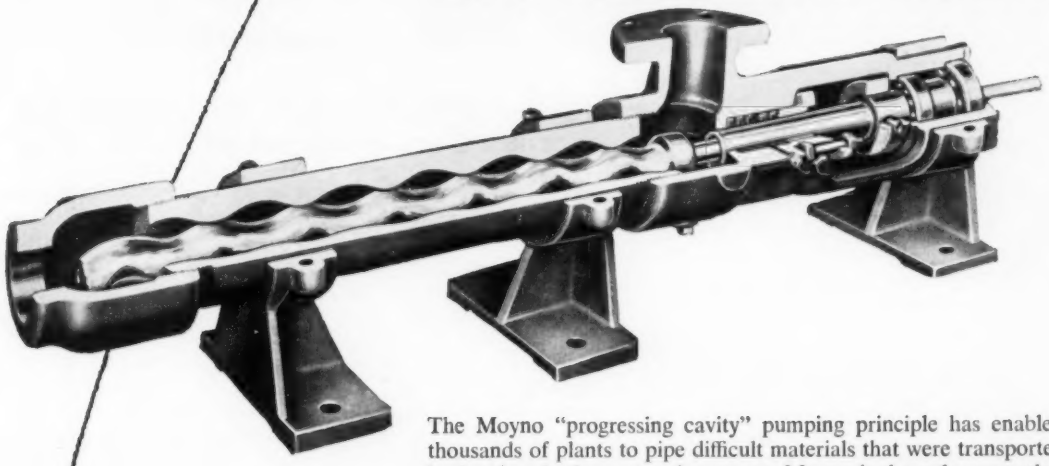
Appointments of new personnel as plant managers and superintendents in plants of Callaway Mills Company have been announced: Elmrose Division, **J. T. Braswell, Jr.,** plant manager, Elm City; **C. B. Mahaffey,**

(Continued on page 40)

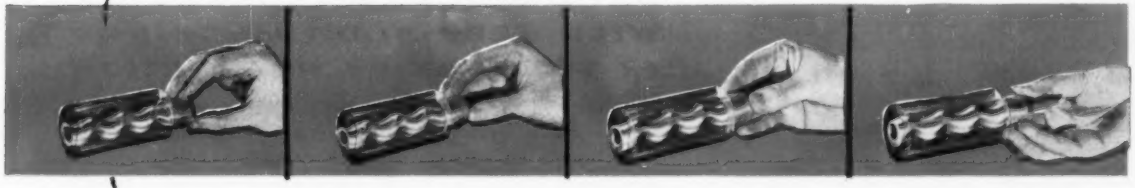
from abrasive slurries to delicate foods . . .

MOYNO® PUMPS

CUT HANDLING COSTS



The Moyno "progressing cavity" pumping principle has enabled thousands of plants to pipe difficult materials that were transported by hand and other expensive means. Moyno is the only pump that can handle many abrasives, pastes, slurries, chemicals, foods, suspended solids, etc., without foaming, aerating, crushing or excessive pump wear.



As shown above, Moyno Pumps have a screw-like rotor that revolves in a double threaded stator creating progressing cavities which smoothly move material through the pump. They will pump anything that will move through a pipe . . . even plaster and non-pourable pastes!

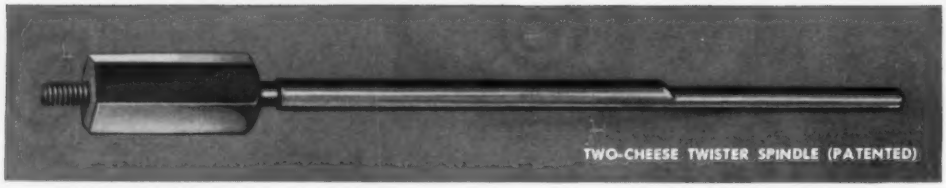
Moyno Pumps are available in capacities up to 500 gpm and pressures up to 1000 psi.

Examine your processing methods. No doubt there are several places where Moyno Pumps can drastically cut costs. Ask us, we'll give you a frank answer. Send us an outline of your problem today! Write for Bulletin 30-BZ

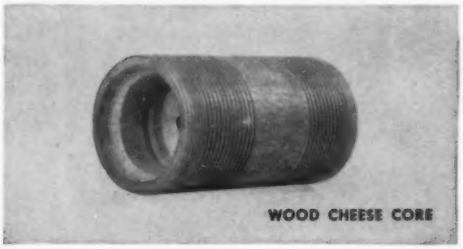
ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO — BRANTFORD, ONTARIO

BARBER-COLMAN ACCESSORIES



TWO-CHEESE TWISTER SPINDLE (PATENTED)



WOOD CHEESE CORE

STAINLESS STEEL DYE SLEEVE

BAKELITE CHEESE CORE SLEEVE

USE THESE BARBER-COLMAN PRODUCTS FOR BEST RESULTS

The accessories shown here are carefully designed and developed by Barber-Colman Company for use on Barber-Colman machines. • The Twister Spindle, used with wood Cheese Cores, is a new idea that makes for better twisting. The offset on the end of the spindle retains the outer cheese and lets it run free of the inner one. Thus, by mounting two cheeses per spindle, the height of the twister creel is reduced. • The stainless steel Dye Sleeves fit the same holders on the Automatic Spooler as the regular plastic Cheese Sleeves and were designed and developed exclusively for this Barber-Colman machine. • Since all of these parts are made of best materials to very close limits, they not only are accurate, uniform, and durable, but also insure *top performance* of your machines.

BARBER-COLMAN SERVICE WILL KEEP YOUR MACHINES AT THE PEAK OF PRODUCTION

For many years Barber-Colman Company has maintained a high-grade Service Department, and made its facilities available to all owners of Barber-Colman equipment at reasonable cost. The men who staff this Department are all experienced hands, trained to handle the special problems of Barber-Colman equipment. They are backed by the knowledge and experience of the entire Barber-Colman organization. You can employ this Service in any manner you wish — on a regular contract basis, for specific problems, or in any emergency. *See your Barber-Colman representative for details.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U.S.A. MANCHESTER, ENGLAND MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Quimanil S.A. Anilinas e Representacoes Rua Glicerio 537, 547 Caixa 5658 e 3431 Sao Paulo, Brazil	Do-Yei Shoji Kabushiki Kaisha No. 7 Awajimchi 1-Chome Higashi-ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd 27 Kothari Building Napier Road Karachi 2, Pakistan

High-temperature dyeing now gives excellent fastness, shade uniformity to nylon tricot

Application of high-temperature dyeing methods—constantly being improved by Du Pont research—has resulted in excellent dyeings of nylon tricot at 235° to 250° F. These dyeings give improved fastness and levelness with shorter dyeing time and lower dye and chemical costs.

Milco Undergarment Company uses a pressurized Burlington Beam Machine for much of its tricot dyeing, particularly the darker shades where barré effects are very noticeable. Using high-temperature methods, they are able to get a wide range of level shades with excellent fastness.

Research at Du Pont has discovered that selected acid dyes offer a range of colors with excellent fastness for tricot dyeing. The specific color types and preferred dye mixtures have been covered in recent technical bulletins, which we will be glad to send on request.

Dyeing of nylon tricot at higher-than-boil temperatures is still another application of this method. Research leading to wider uses continues at Du Pont. For detailed information on high-temperature dyeing, as well as the bulletin mentioned above, contact your Du Pont representative or write: E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Dyes and Chemicals Div., Wilmington 98, Del. In Canada — Du Pont Company of Canada Limited, Montreal, P. Q.

Du Pont Dyes

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

MORTON SYSTEM STOCK DYEING AND BLEACHING MACHINERY

MORTON SYSTEM STOCK DYEING MACHINES - MORTON MACHINE WORKS, COLUMBUS, GA.

With a MORTON SYSTEM for synthetic and natural fibers you are completely assured of stock dyeing and bleaching at its best — if you insist on the MORTON SYSTEM.

MORTON SYSTEM Machines are Automatically Controlled — Require Minimum Labor—Produce Outstanding Results.

Morton System double circulating stock dyeing and bleaching machines are designed to operate at normal temperatures or at elevated temperatures. The same machine can be used for both types of dyeing.

MORTON SYSTEM STOCK DYEING MACHINE - MORTON MACHINE WORKS, COLUMBUS, GA.

Manufactured by:

MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:

BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — STAINLESS STEEL DYE TUBES CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS.

MICRO precision switches

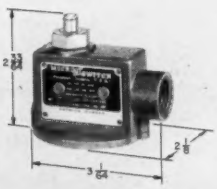
...THEIR USE IS A PRINCIPLE OF GOOD DESIGN

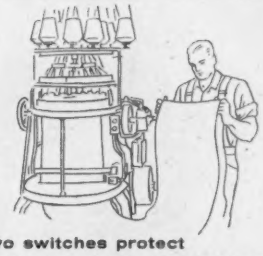
HONEYWELL

HOW TO MAKE

YOUR TEXTILE MACHINERY more automatic ...safer and more productive

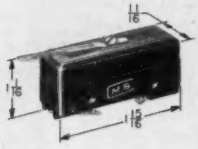
Two switches stop quill hopper carriage at upper and lower limits.



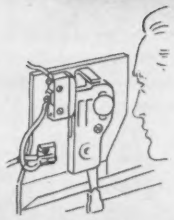


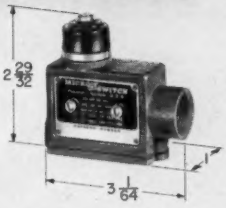
Two switches protect needle beds and stop knitting machine if thread breaks.

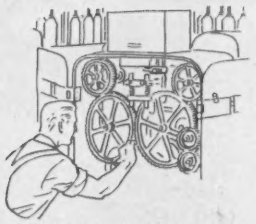
Here are 4 MONEY-SAVING IDEAS for mill operators



This switch on the bobbin feeler signals need for bobbin refill.







Switch shuts off power when operator opens gear doors on spinning frames.

There are thousands of uses for MICRO SWITCH precision switches in applications like these—

- as trumpet stops on combing heads
- as carriage movement controls
- to prevent needle breakage
- to stop bobbin winding when bobbin fills
- to automatically eject unfilled quills
- to stop motor when gear box is opened
- to control position of pressure roll on warper
- to control tension on cloth measuring machine
- as thread breakage detectors
- to control cloth position as web unrolls
- to position clamps on cloth stretching machine
- as thread run out detector on loom
- as selvage build-up control
- as fabric thickness detectors
- and many other textile applications

Call for MICRO SWITCH Engineering Service

Whatever your switch problem, MICRO SWITCH Engineering Service can cooperate with you in a way to save time and money. Call your MICRO SWITCH Branch office. Distributors with full stocks of switches are located in key cities everywhere. Look under "Switches, Electric" in the Yellow Pages.

Send for Catalog 101 on "Switches for Industry"

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

HONEYWELL

USE AN

IGEPAL® CO

IN YOUR PROCESS

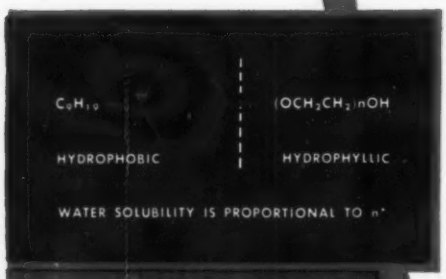
OR PRODUCT

The 8 products that comprise the Igepal CO series of non-ionic surfactants, while chemically alike, are different in ethylene oxide content, solubility and performance characteristics. They are specifically designed and performance tested for use in technical processes and consumer products requiring a stable non-ionic surfactant.

The correct hydrophobic-hydrophyllic balance of any surfactant system is essential to optimum performance. The eight products in the Igepal CO series cover the practical range of hydrophobic-hydrophyllic ratios for nonylphenol to ethylene oxide.

Furthermore, being non-ionic, the Igepals are not limited in their use because of undesired reactions with electrolytes and are stable to hydrolysis by acids and alkalis even at elevated temperatures.

To assist you in planning significant experiments in your product or process, the exact composition of the Igepal CO products are described below. Matched sets of samples are available upon request.



PRODUCT	n*	% ETHYLENE OXIDE	CLOUD POINT, 1% SOLUTION
Igepal CO-210	1½	23	Insoluble in water
Igepal CO-430	4	44	Insoluble in water
Igepal CO-530	6	54	Cloudy at 32 F.
Igepal CO-630	9-10	65	126-133 F.
Igepal CO-710	10-11	68	158-165 F.
Igepal CO-730	15	75	203-212 F.
Igepal CO-850	20	80	Clear at 212 F.
Igepal CO-880	30	86	Clear at 212 F.

*Moles of ethylene oxide per mole of nonylphenol

IGEPAL CO

SURFACTANTS ARE USED IN PRODUCTS OR PROCESSES FOR:

AGRICULTURE
BUILDING
CHEMICAL MANUFACTURING
DETERGENT COMPOUNDING
COSMETICS
DAIRY
LEATHER
METALS
PAPER
PLASTICS
PETROLEUM
TEXTILE
RUBBER

To indicate the wide range of performance characteristics available with Igepal CO surfactants, some typical uses are shown for each product:

IGEPAL CO-210
In high concentrations, serves as defoaming agent in low foaming detergents.
In low concentrations, acts as foam stabilizer for high foaming detergents.
Co-emulsifier in non-ionic surfactant blends.
Defoaming agent in cold water cleaners.
Oil soluble detergent and dispersing agent for use in petroleum oils.

IGEPAL CO-430
Oil soluble emulsifying agent.
Intermediate in the synthesis of high foaming, water soluble sulfate esters.
Oil soluble detergent and dispersing agent for use in petroleum oils.

IGEPAL CO-530
De-inking of paper.
Emulsifier for silicones and agricultural chemicals.
Oil soluble surfactant and emulsifying agent.
Detergent and dispersing agent for use in petroleum oils.

IGEPAL CO-630
Surfactant for use in all phases of textile processing.
Fast rinsing surfactant for cleaning paper machine felts.
Rewetting agent for paper towels and tissues.
Wetting agent in hide soaking and penetrant in fat liquors.
Surfactant for household and industrial cleaning formulations.
Wetting agent for use with mineral acids and corrosion inhibitors.

IGEPAL CO-710
Can be used interchangeably with Igepal CO-630 in most applications, and is particularly effective when higher temperatures are employed.
Highly efficient textile detergent in neutral, acid and alkaline media.
Surfactant in heavy duty liquid detergent formulations and in controlled suds laundry and household formulations.

IGEPAL CO-730
Surfactant for high temperature general detergency, and dispersing.
Emulsifying agent for fats, oils and waxes.
Penetrating and wetting agent in caustic solutions.
Surfactant for use with high concentrations of electrolytes.
Wetting agent for use with mineral acids and corrosion inhibitors.

IGEPAL CO-850
Surfactant for high temperature general detergency and dispersing.
Wetting agent in high concentrations of electrolytes.
Emulsifying agent for fats, oils and waxes.
Stabilizer for synthetic latices.

IGEPAL CO-880
Detergent for high temperature scouring of textiles in pressure equipment.
Stabilizer for synthetic latices.
Surfactant for high temperature general detergency and dispersing.
Emulsifying agent for fats, oils and waxes.
Wetting agent in high concentrations of electrolytes.

MANY APPLICATIONS REQUIRE A MIXTURE OF BOTH AN OIL-SOLUBLE AND WATER-SOLUBLE NON-IONIC SURFACTANT. IN SUCH CASES WE SUGGEST THE USE OF AN IGEPAL HAVING A LOW ETHYLENE OXIDE CONTENT IN COMBINATION WITH ONE HAVING A HIGH ETHYLENE OXIDE CONTENT. THIS WILL GIVE IMPROVED EMULSION STABILITY OVER A WIDER TEMPERATURE RANGE.

For assistance on complex surfactant problems, our technical staff is always available for consultation.
Technical literature on the Igepal CO surfactants will be supplied upon request. Prompt shipments can be made from warehouse stocks maintained at branch offices.

From Research to Reality

ANTARA gaf

ANTARA CHEMICALS

A SALES DIVISION OF
GENERAL ANILINE & FILM CORPORATION
435 HUDSON STREET • NEW YORK 14, NEW YORK

SALES OFFICES: New York • Boston • Providence • Philadelphia • Charlotte • Chattanooga • Chicago
Portland, Ore. • San Francisco • Los Angeles. IN CANADA: Chemical Developments of Canada, Ltd., Montreal

Igepal CO surfactants manufactured by General Aniline & Film Corp. are sold outside the United States under the trademark "Antarox CO".

"... always dresses for the occasion. This batch of Seyco goes into tuxedo shirts. . . ."

Yep, Si does dress for the occasion. And when you size with Seyco your warps are dressed for the occasion. Clothes make the man, but his behavior counts too.

Seyco's 52 years of experience have taught it to dress well and surprise Emily Post with its good behavior in weaving.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

748 RICE STREET, ATLANTA, GEORGIA

SEYCO

Announcing

THE NEW PLATT MR3 Ring Spinning Frame in lifts up to 12"

1. Increased speeds and productions
2. Inherent flexibility — all counts — all fibres
3. Higher overall efficiencies
4. Reduced operative work loads
5. Lower running and maintenance costs
6. Simplicity a keynote in design
7. Remarkable cleanliness
8. All lifts up to 12"

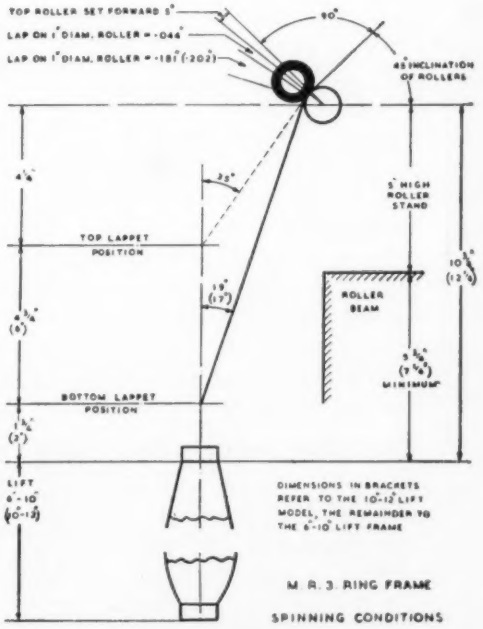
Many factors have been taken into account in the design of this new frame, but perhaps the most important are those relating to the spinning conditions. Very exhaustive trials, backed up by a detailed mathematical examination of the problem, were undertaken before such specifications as delivery angles of the yarn, lappet movement and roller inclination were finally established. A very good agreement between theory and experiment led us to adopt the following values as standard:

Inclination of drafting rollers — 45°.
Lappet movement — 4¾ in. (6 in. to 10 in. lift) and 6 in. (10 in. to 12 in. lift).
Roller delivery angle at top of lift — 35° to the vertical.
Roller delivery angle at bottom of lift — 19° to the vertical (6 in. to 10 in. lift) and 17° (10 in. to 12 in. lift).

While we have standardised on and strongly recommend a 45° inclination of the drafting rollers, a 35° inclination can be employed if the customer has a preference for this smaller angle.

The improved spinning conditions provide more favourable spinning angles, a lower yarn tension, a reduced end breakage rate and a better balanced yarn balloon throughout the whole of the package build.

All these factors have enabled traveller speeds and spindle speeds to be raised quite substantially. As a result, production is increased, except in those cases where the front roller delivery is the limiting factor.


TOP ROLLER SET FORWARD ⅛"
LAP ON 1" DIAM. ROLLER = ·044"
LAP ON 1" DIAM. ROLLER = ·181" (·202)
90°
45° INCLINATION OF ROLLERS
35°
5" HIGH ROLLER STAND
TOP LAPPET POSITION
ROLLER BEAM
19° (17°)
BOTTOM LAPPET POSITION
LIFT 6"-10" (10"-12")
DIMENSIONS IN BRACKETS REFER TO THE 10"-12" LIFT MODEL, THE REMAINDER TO THE 6"-10" LIFT FRAME
M. R. 3. RING FRAME
SPINNING CONDITIONS

LOCAL SERVICE GUARANTEED BY

ATKINSON, HASERICK & CO., INC.
ENGINEERS & AGENTS FOR THE WORLD'S LEADING TEXTILE MACHINERY
FRAMINGHAM, MASS. · CHARLOTTE 2, N. C.

PLATT BROS. (SALES) LTD.
OLDHAM, ENGLAND
MARKETING THE TEXTILE MACHINERY MADE IN THE WORKS OF
PLATT BROTHERS & CO. LTD. PLATTS (BARTON) LTD.
HOWARD & BULLOUGH LTD. DOBSON & BARLOW LTD.

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 30)

superintendent, Milstead; **J. Philip Cleaveland,** plant manager, and **Jesse G. Maddox,** superintendent, Unity; **B. P. Albright,** plant manager, and **N. G. Slaughter, Jr.,** superintendent, Unity Spinning. Hillcrest Division; **H. Frank Lewis,** plant manager, Calumet; **S. A. T. Newsom,** plant manager, Hillside; **S. P. Rice,** plant manager, Valway. * * * **James C. Teaver** has been named chief standards engineer for the company in charge of job standards and standard costs, under the supervision of **A. W. Gunn,** treasurer. * * * **Norman McClellan** is new overseer, synthetic unit, at Unity spinning plant.

Fieldcrest Mills, Inc., Spray, N. C., has named as traffic manager **Ernest W. Sams,** who previously held a similar position with American and Efird Mills, Inc., Mt. Holly, N. C. New cotton receiver for the firm is **George S. Brandon,** formerly cotton classer for M. Lowenstein and Sons, Anderson, S. C. **Robert H. Hair,** who previously did industrial engineering and cost control work with Procter and Gamble Co. in Kansas City, Mo., and who has just completed four years service as an Air Force officer, has been appointed to the comptroller's department.

The Combed Yarn Spinners Association has named as its president **Ben R. Rudisill,** president of Carlton Yarn Mills, Inc., Cherryville, N. C. First vice-president is **C. K. Torrence,** vice-president of Superior Yarn Mills, Mt. Holly, N. C., and **R. L. Stowe, Jr.,** secretary and treasurer of Chronicle Mills, Belmont, N. C., became second vice-president. **L. Arnold Kiser,** vice-president of Sadie Cotton Mills, Inc., Kings Mountain, N. C., was named vice-president for one year.

Bigelow-Sanford Carpet Co., New York, N. Y., has announced that former president **James D. Wise** has

Mr. Wise

Mr. Weicker

been elected chairman of the board. **Lowell P. Weicker,** previously assistant secretary general for production and logistics for NATO in Paris, has been elected president and chief executive officer.

At the annual meeting of the Northern Textile Association, **Seabury Stanton,** chairman, executive committee, Berkshire Hathaway, Inc., was the recipient of the Association's highest honor, the Silver Medal, "awarded to persons whose accomplishments on behalf of the textile industry merit the recognition of all." Mr. Stanton has been particularly active in efforts to protect the economy and the industry from low-cost foreign competition. * * * All officers of the association were re-elected with the exception of **Edward J. Russell,** vice-president of Troy (N. H.) Blanket Mills, who was elected a vice-president. Mr. Russell

(Continued on page 202)

NON-FLUID OIL
TRADE MARK REGISTERED

THE CHOICE OF COST-CONSCIOUS CARDERS

Always—the best product in any given market turns out to be the most economical . . . this has been proven time and again by thousands of users of NON-FLUID OIL.

Consider these facts:

1. Drip-less, waste-less, NON-FLUID OIL is less expensive to use because it stays in bearings and off clothing—giving better lubrication.

2. NON-FLUID OIL prevents wear and maintains accurate card adjustment—lasting 4 to 6 times longer in comb-boxes.

3. NON-FLUID OIL stays in comb-boxes—prevents heating and lubricates dependably, whereas ordinary oil leaks out and wastes—getting on to card clothing and cotton.

4. With ordinary oil, cards wear and lose adjustment quickly, causing uneven sliver from cards which gives you trouble all through the mill.

NON-FLUID OIL is used in card rooms of 7 out of 10 of the best run mills. Write for Bulletin T-5 and free testing sample.

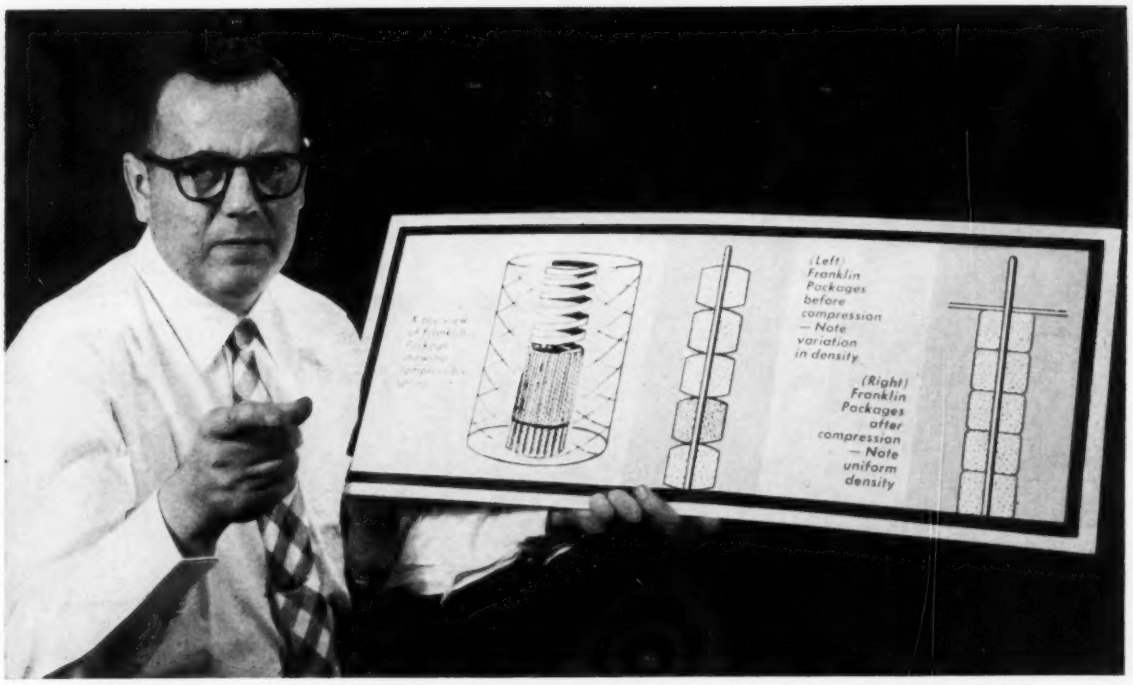
NEW YORK & NEW JERSEY LUBRICANT COMPANY
292 MADISON AVE., NEW YORK 17, N. Y.
WORKS: NEWARK, N. J.
So. Dist. Mgr.: Lewis W. Thomason, Jr. Charlotte, N. C.

1896 60 YEARS 1956 — SIXTY YEARS OF LUBRICATION SERVICE TO INDUSTRY — NON-FLUID OIL

WAREHOUSES

Birmingham, Ala. — Atlanta, Ga. — Columbus, Ga. — Charlotte, N. C.
Greenville, S. C. — Chicago, Ill. — Springfield, Mass.
Greensboro, N. C. — Detroit, Mich. — Providence, R. I. — St. Louis, Mo.

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.


(Left) Franklin Packages before compression — Note variation in density
(Right) Franklin Packages after compression — Note uniform density

DON'T SAY "PACKAGE DYED"

SAY "Franklin Process Dyed"

Here's why:

RIGID TUBES Most package dyers use rigid tubes. Rigid tube packages vary in density, like any commercially wound packages, and the variations *can not* be corrected in the dyeing machine.

VARIATION IN SHADE Any considerable variation in density of packages will cause a variation in shade within a given dye batch.

FRANKLIN SPRINGS Franklin Process Compressible Package Dyeing is the *only* package dyeing method using Franklin Springs, whereby density of all packages in a machine can be equalized (see diagram).

UNIFORM SHADE Equalized density makes Franklin Process dye batches exceptionally uniform in shade.

DYE BATCHES AS LARGE AS 2500 LBS. Can be supplied by Franklin Process if desired.

MAN-MADE FIBRES We dye man-made fibres (such as Orlon and Dacron) as well as cotton and worsted.

ORDER FRANKLIN PROCESS COLORED YARNS

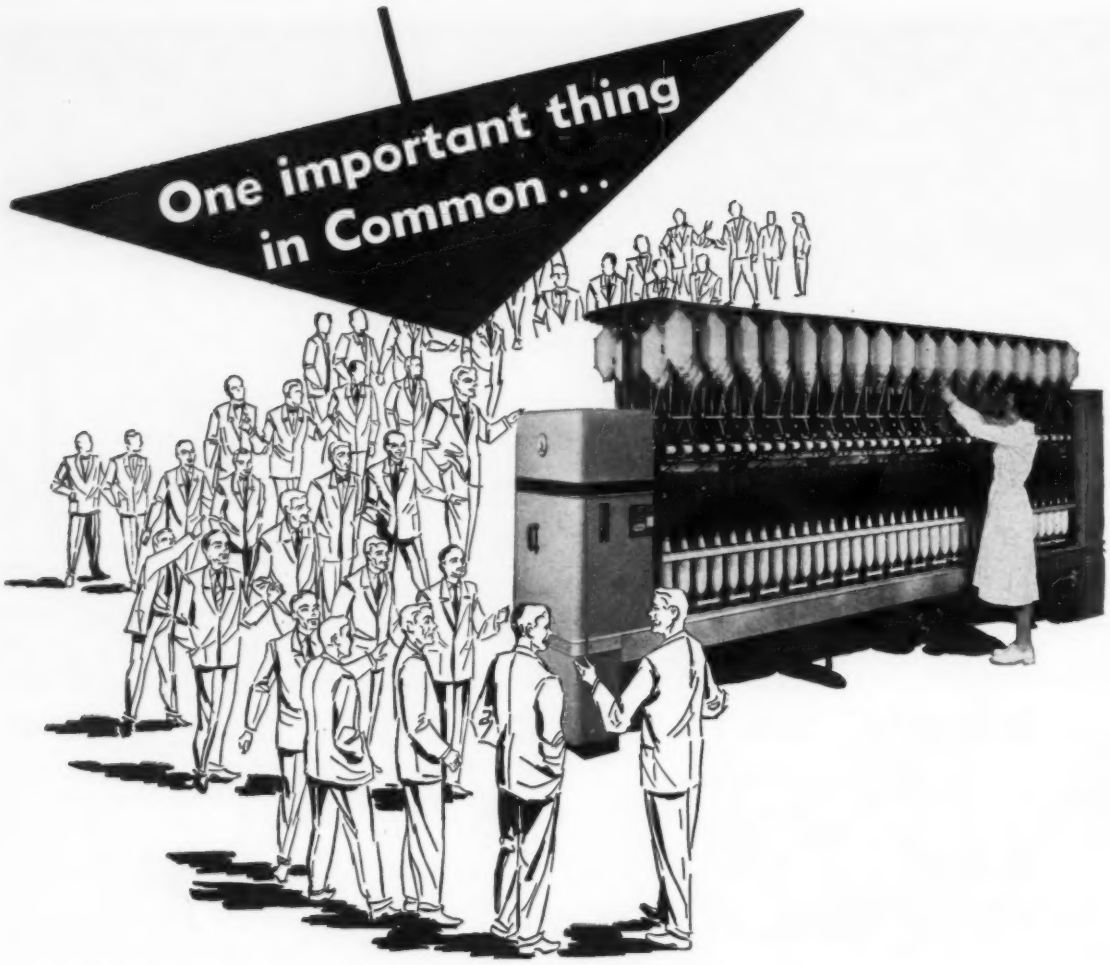
Get the best in dyeing, a yarn that meets your specifications, and service that is "conveniently yours" from any one or all of 5 dye plants.

Franklin Process

YARN MERCHANTS AND LARGEST PACKAGE DYERS IN THE WORLD
DYEING EXCLUSIVELY ON THE FRANKLIN SPRING

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • FINGERVILLE, S. C.

New York Representatives — 40 Worth Street



These profit-making mill men have purchased Saco-Lowell Textile Machinery. There is a definite trend toward Saco-Lowell . . . . in the past year we have **added more major equipment customers,** attracted by new, quality-making, cost-reducing Saco-Lowell equipment, **than ever before in our history.**

The reasons are many, but basically, we find two standing out among all the rest.

FIRST: Continuing Saco-Lowell research has resulted in new methods, new assemblies, and new machinery which have lowered operating costs and permitted them to make a profit under highly competitive conditions.

SECOND: Unprecedented, years-ahead machinery developments have resulted in better opening, larger packages, increased labor efficiency, less waste, lower maintenance cost, and highest possible quality.

A Saco-Lowellizing program will help your mill produce higher quality yarn at lower cost as it already has for so many others. Call or write your nearest Saco-Lowell Sales Office, let them prepare a "Forecast of Savings" for you.

AMONG THE MANY RECENT "FIRSTS" RESULTING FROM SACO-LOWELL RESEARCH ARE THESE EPOCH-MAKING DEVELOPMENTS:

- **Versamatic Drawing**
- **Gwaltney Spinning with 5 different drafting elements**
- **Model 56 High Production Comber**
- **High Compression Calendars for Pickers**
- **Positrol Slasher**
- **Tru-Set Top Arms**
- **New Era Spindles**

SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

NOW!

use all the size you need with nylon yarn

it stays flexible with

NOPCOSIZE® N

Now it is possible to apply extra heavy sizing to low twist nylon yarn—even producer's twist—and still get flexibility. Nopcosize N is *internally plasticized* to permit you the greater depth of size protection needed to avoid filament breakage.

Mill tests on producer's twist yarn have proven eminently satisfactory.

Try this outstanding size on your warps and prove it to yourself.

Nopco Chemical Company, Harrison, N. J.

SIZED WITH 2¼% NOPCOSIZE N

SIZED WITH 2% CONVENTIONAL SIZE

These enlargements show the much greater flexibility of nylon yarn sized with Nopcosize N.

NOPCOSIZE N—

your best defense against:

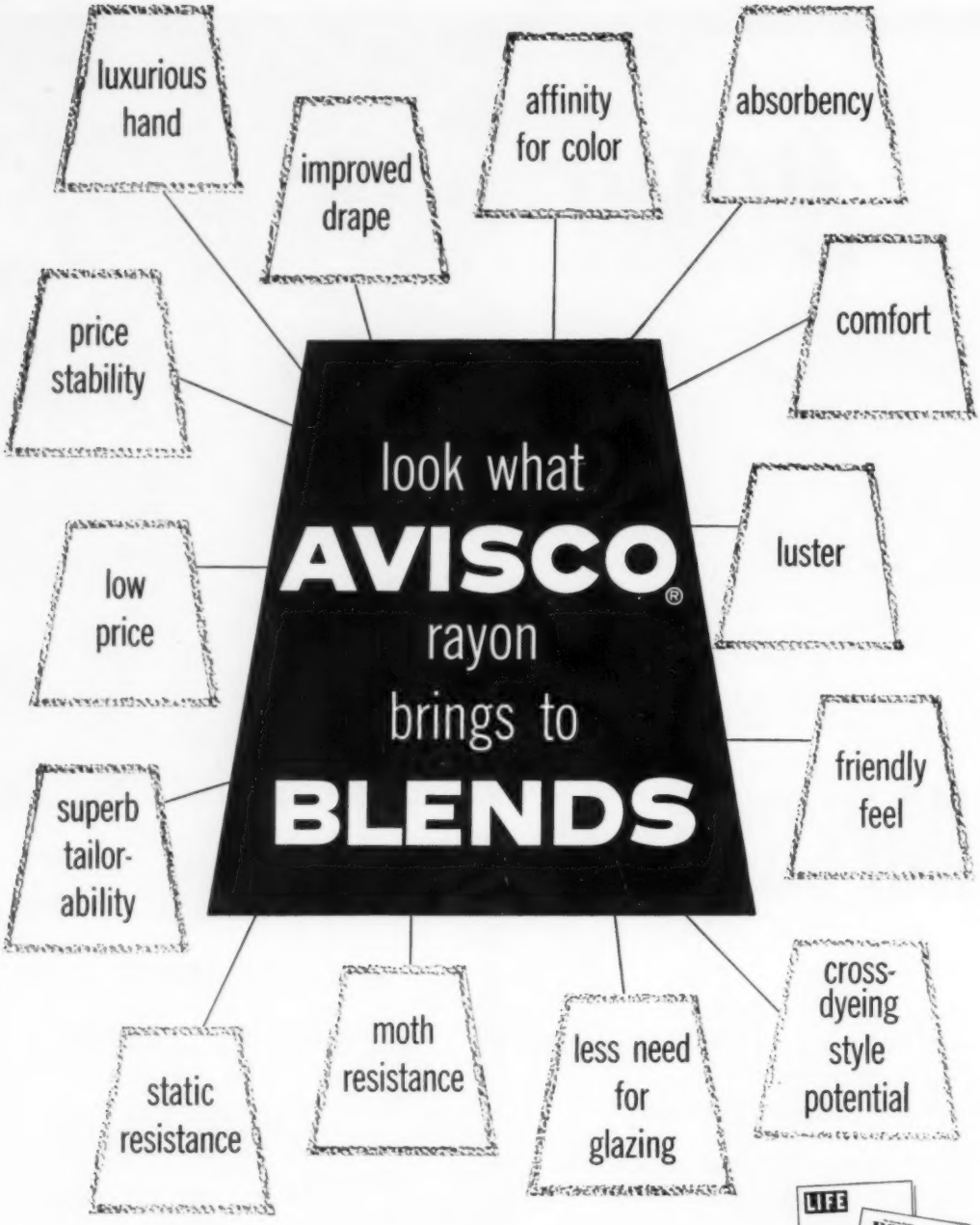
FILAMENT BREAKAGE

TEAR DROPS

ABRASION

NOPCO

PLANTS: Harrison, N. J. • Cedartown, Ga. • Richmond, Calif.
London, Canada



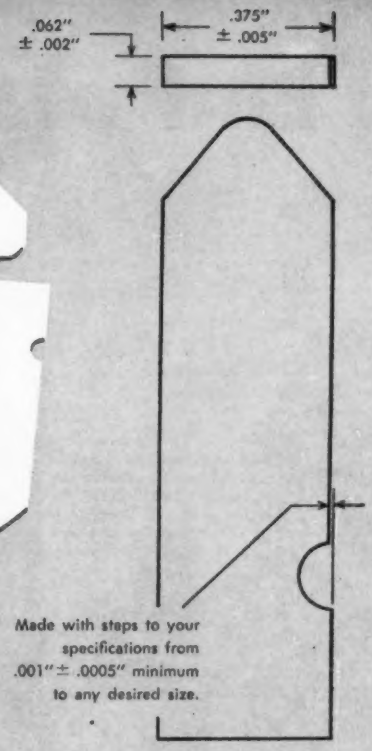
More and more manufacturers and cutters are discovering the magical effects they can achieve with new blends of rayon with other fibers.

The Avisco Integrity Tag makes such blends promotable. Fabrics qualified to bear the tag enjoy immediate consumer recognition at point of sale. This recognition is created by millions of dollars of national advertising which assures quality all the way back to the fiber.

We will be happy to consult with you on the myriad possibilities of rayon blends. Call LA 4-7200 or write American Viscose Corp., 350 Fifth Ave., New York 1, N.Y.

ALSIMAG®

CERAMIC CLEANER BLADES



Made with steps to your specifications from .001" ± .0005" minimum to any desired size.

Typical AlSiMag Cleaner Blade Design. Great dimensional uniformity. Precision ground, all surfaces lapped flat and parallel.

Reduce yarn defects caused by broken filaments, waste, lint. Especially designed for synthetics. Fit standard holders. Longer Life—New, super-hard ALSIMAG 614 Alumina.

By arranging the steps to adjoin, you will get double spacing.

With steps arranged in sequence, the same holders give single spacing.

Users report substantial increases in production of top-quality filament yarns. Custom samples supplied promptly at reasonable cost. Test these AlSiMag Ceramic Cleaner Blades in your plant and let your own quality and cost records show you the great advantages of these new blades. Send blueprint or sketch for complete details.

A Subsidiary of Minnesota Mining and Manufacturing Company

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENN.
55TH YEAR OF CERAMIC LEADERSHIP

SALES ENGINEERS: NEW ENGLAND: W. J. Geary, 27 Fairlawn St., Cranston, R. I., Williams 1-4177. NORTHEAST: J. S. Gosnell, 205 Walnut St., Livingston, N. J., 6-1260. NORTH CENTRAL: Minnesota Mining & Mfg. Co., 367 Grove St., St. Paul 1, Minn., Cedar 3071. NORTHWEST: Minnesota Mining & Mfg. Co., 320 Shaw Road, S. San Francisco 10, Cal., Plaza 6-0800. SOU. CAL.: W. L. Thompson, 6023 South Garfield Ave., Los Angeles 22, Raymond 3-6641. SOUTH CENTRAL: Minnesota Mining & Mfg. Co., 1221 Dragon St., Dallas 2, Texas. SOUTHEAST: James W. Crisp, Poinsette Apts., No. 2C, Greenville, S. C., 5-4172. ALL OTHER AREAS: J. E. Spearman, American Lava Corp., Chattanooga 5, Tenn., Amherst 5-3411. REPRESENTATIVES: CANADA: Ian M. Haldane & Co., P. O. Box 54, London, Ont. ALL OTHER COUNTRIES: Minnesota Mining & Mfg. Co., International Div., St. Paul 6, Minn.

End of the Line for *Lint*

Bank of Auto-AIRMATS on one of the four air conditioning systems (totalling 138,000 cfm) serving the Stone plant. Filters installed overhead to conserve floor space.

Air conditioning system designed by DEPARX STIMSON, Winston-Salem, N. C.; installed by BUENSOD-STACEY, INC., Charlotte, N. C.

Auto-AIRMAT Filters Assure Lint-Free Air For Stone Manufacturing Company

The "Creators of Stone's Wear Apparel" made sure that lint in recirculated air would never hamper production of their quality line of petticoats and children's play clothes. They equipped their Greenville, South Carolina plant with AAF Auto-AIRMAT filters—the *only* filters designed to remove lint fibres from the air and clean themselves, at the same time!

The AIRMAT media, installed in roll form at top of unit, becomes a moving filter curtain that is rerolled at bottom with its lint load. Clean media is introduced automatically, and the lint is wrapped up in the roll for easy disposal. Get all the facts about the Auto-AIRMAT. Call your local AAF representative, or write direct for Bulletin 234.

AAF herman nelson

American Air Filter

COMPANY, INC.

275 Central Avenue, Louisville 8, Kentucky

American Air Filter of Canada, Ltd., Montreal, P. Q.

Herman Nelson Unit Blowers

Herman Nelson Propeller Fans

BETTER AIR IS OUR BUSINESS

Illinois Heating Specialties

Air Filters and Precipitators

SATURDAY'S HEROES have nothing on Swift's Soaps when it comes to teamwork. Your Swift man quarterbacks a team of active, versatile soaps and detergents that have been developed to *deliver* . . . under *your* set of conditions.

For example: Where fine dyeing calls for thorough, yet gentle scouring, try Swift's VERTEX FLAKES. Here is a really outstanding product of the finest quality . . . a low titer soap that goes into solution fast. It is very effective at the low temperatures needed to provide efficient scouring at reduced steam costs.

VERTEX FLAKES are just one part of the Swift line. Your nearby Swift representative will be pleased to go over the entire line-up with you and help you call the signals for better woolens. And remember, in soaps and detergents . . .

VERTEX FLAKES • 557 FLAKES
WHITE RIBBON CHIPS • WOOL FLAKES
SOLAR liquid or
granulated detergents

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

Swift
ICI BE YEAR

To Serve Your Industry Better

SWIFT & COMPANY, SOAP DEPARTMENT, 4115 Packers Avenue, Chicago 9, Illinois

THREE MACHINES . . .
TOP-QUALITY PRESSED ROLLS

Butterworth *DURA-SMOOTH* Rolls play a vital part in the finishing end of the textile industry. The right roll for the job . . . the right material . . . the right degree of hardness and smoothness . . . all contribute to economical finishing and uniform quality control.

For example, in a Butterworth Water Mangle, pressures up to 15 tons require Butterworth *DURA-SMOOTH* special rolls, designed for heavy-duty service and long, trouble-free operation.

In a Butterworth Embossing Calender, Butterworth *DURA-SMOOTH* Rolls provide uniform embossing characteristics, with no variation from lot to lot. That's because all Butterworth Rolls are quality-controlled at every step in manufacture.

And in a Butterworth Calender, pressures are accurately adjusted to each side of the roll, for even pressures across the face. Butterworth *DURA-SMOOTH* Rolls never loosen or slip . . . they're locked on a forged steel shaft under controlled pressure.

New or refilled, there's a Butterworth *DURA-SMOOTH* Roll for every finishing need. Call or write today for a quotation on your requirements.

H. W. BUTTERWORTH & SONS COMPANY

Bethayres, Pennsylvania

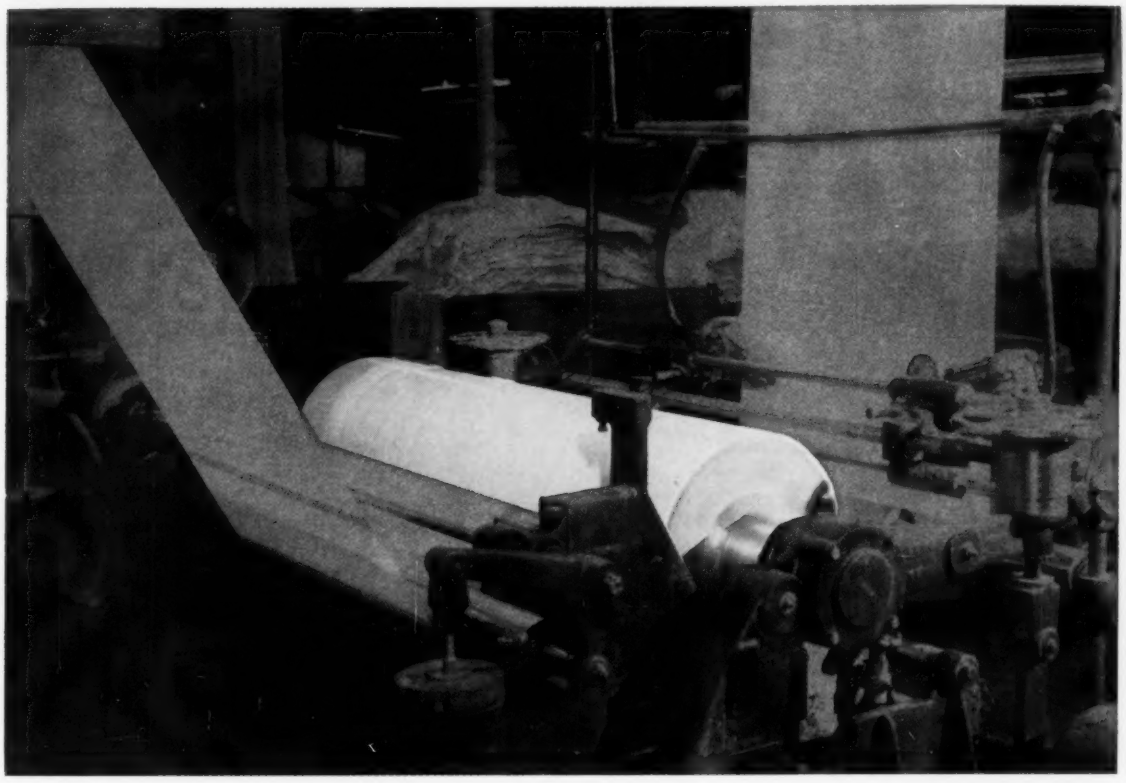
1211 Johnston Bldg., Charlotte, N.C. • 187 Westminster St., Providence, R.I.

Representatives in Principal Cities of the World

Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing, Embossing, Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains

BUTTERWORTH
Serving the Textile Industry Since 1820

DAYCO FINISHING ROLLS



"Job engineering" reduces roll costs on standard or special applications

On normal starch mangle applications or for special operations, Dayco "job engineered" Finishing Rolls can mean substantial savings in roll covering costs and down-time. "Job engineering" means your Dayco Roll is built to work under the specific conditions found in *your* mill. That's why Dayco Rolls last so long—so seldom need regrinding.

One mill has already saved twice the cost of the original "job engineered" Dayco Roll. It's a squeeze roll used in the washing phase of a raw stock dyeing operation. Tramp metal and other foreign matter in the stock actually tore apart previously used rolls in four months.

A Dayco roll, specifically designed and built for this application was installed over a year ago. Today, though nicked here and there, it still has many, many months of service life ahead. This is only one of the many "job engineered" Dayco Finishing rolls producing much wanted cost reductions in mills throughout the South.

For immediate information on reducing roll costs in your mill send the coupon below for "All the money-saving facts about New Dayco Finishing Rolls."

Dayton Rubber

DAYCO ROLLERS . . . FOR OFFSET, LETTERPRESS, NEWSPAPER, GRAVURE, ANALIN, COATING, GRAINING, STEEL MILLS, TEXTILE MILLS, DAYCO OFFSET BLANKETS, DAYCO FOUNTAIN DIVIDERS, DAYCO COLOR SEPARATORS.

© D. R. 1956

DAYTON RUBBER CO., Holfast Division
1486 Lakewood Avenue, Atlanta, Georgia

Gentlemen:
Please rush me "All the money-saving facts about the New Dayco Finishing Roll."

Name_____

Position_____

Company_____

Address_____

City_____ **State**_____

Mount Hope
Cloth Handling SYSTEM

You too will be "pleased with its performance". Read what DAN RIVER MILLS says about it . . .

EXPANDERS

CONTINUOUS ROLL FEEDS

EXPANSION GUIDES

GUIDERS

CLOTH OPENERS

SLACK SELVAGE ELIMINATORS

SKEWED WEFT STRAIGHTENERS

BOWED WEFT STRAIGHTENERS

ADJUSTABLE TENSION SQUEEZERS

OVERHEAD SHEAVES

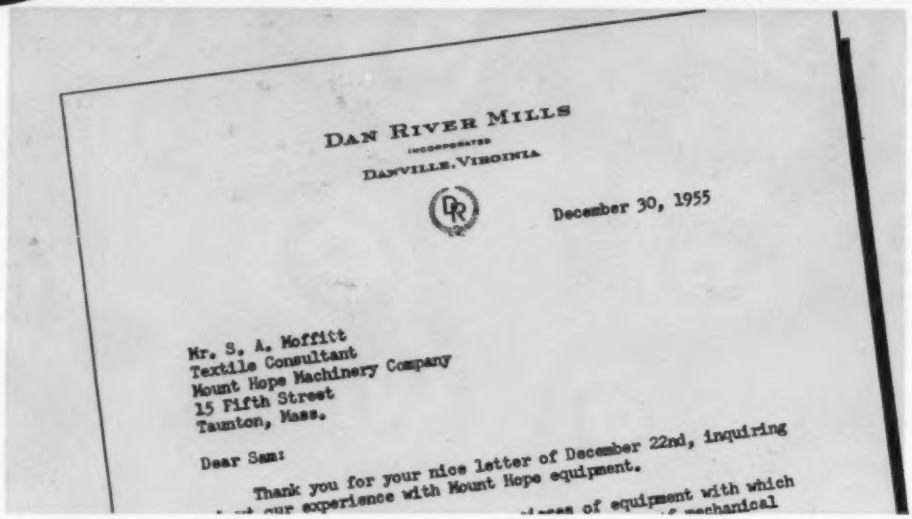
DETWISTER TURNTABLES

DETWISTER SWITCHES

PLAITERS

DRAW ROLLS

POTEYES



DAN RIVER MILLS
INCORPORATED
DANVILLE, VIRGINIA

December 30, 1955

Mr. S. A. Moffitt
Textile Consultant
Mount Hope Machinery Company
15 Fifth Street
Taunton, Mass.

Dear Sam:

Thank you for your nice letter of December 22nd, inquiring [illegible] our experience with Mount Hope equipment. [illegible] of equipment with which [illegible] mechanical

"We have a number of various pieces of equipment . . . ten sets of mechanical cloth guiders, approximately 100 Mount Hope "Free Wheeling" Expanders, overhead reels, which open the cloth through Mechanical Guiders.

At our Riverside Division we use several automatic turntables, reels, openers, guiders and plaiters . . .

We have found Mount Hope Equipment to be very satisfactory, requiring the minimum of repair, and we are pleased with its performance . . ."

— says Basil D. Browder, Executive Vice President.

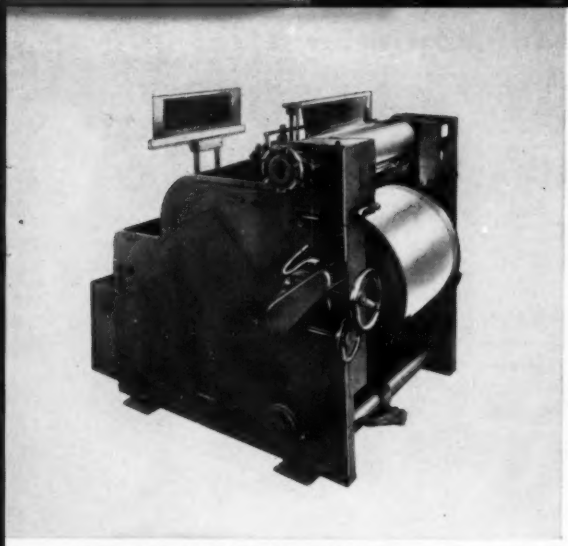
Send for our write up — *"Mt. Hope Cloth Handling System"* which describes in detail the System's many applications and how it can save money and improve quality.

for
MAXIMUM PRODUCTION
LOWER COST
MINIMUM SECONDS
use the complete
MOUNT HOPE SYSTEM

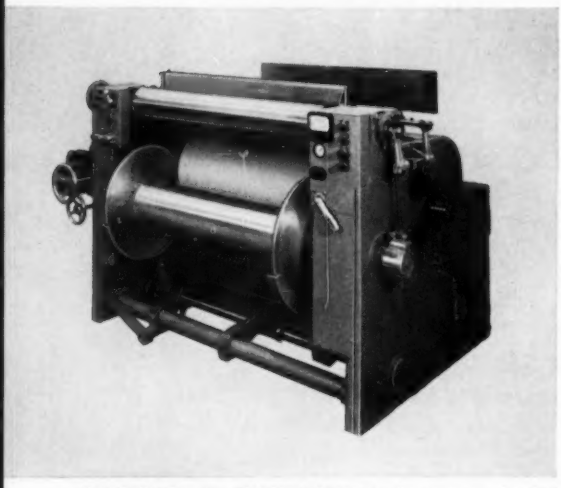
MOUNT HOPE
MACHINERY COMPANY

Originators of Modern Expanders
Leaders in Cloth Handling Equipment
153 Fifth St., Taunton, Mass.

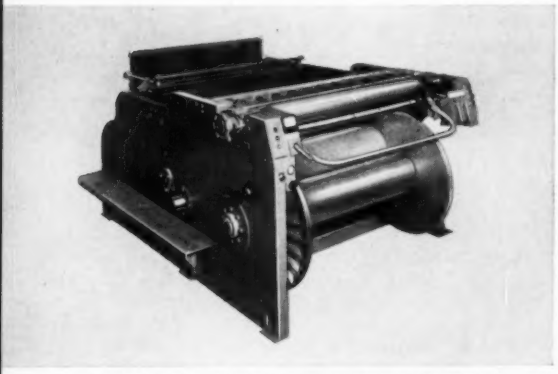
Southern Repair Shop, Charlotte, N. C.



1 KIDDE-SIPP 21" TRICOT WARPER—handles beams with 14" or 21" diameter flanges and with lengths up to 21". Minimum yarn speed is 75 YPM; maximum is 600 YPM.



2 KIDDE-SIPP 42" TRICOT WARPER is the same as the 21" Warper except that it will handle beams up to 42".



3 KIDDE-SIPP HIGH-SPEED COTTON SYSTEM WARPER—handles 54¼" or wider beams with flanges up to 36". Pushbutton controls. Constant yarn speeds to 900 YPM.

3 NEW WAYS ...to make better beams

ALL THREE of these new Kidde-Sipp warpers make better beams because all three have these Kidde-Sipp features:

Beam doffs automatically—even a girl can doff a 2000 pound beam easily, in a hurry, and single-handed. She just pushes a lever and a hydraulic system does the work . . . swings the beam down and out of the warper.

Yarn is never scuffed—because brakes on the measuring roll, compression roll, and beam are all synchronized electrically. When one stops, they all stop simultaneously. There's no strain to scuff the yarn.

Yarn builds up evenly—because the compression roller has 2 hydraulic cylinders—one at either end (instead of just 1 in the center). This produces even, balanced pressure which assures even build-up of yarn. And hydraulic loading ends all chatter and bounce.

Because there are neither counter shafts nor chains and sprockets in the drive, smooth and trouble-free operation is assured. There are a lot more good reasons why you get a better beam with these three Kidde-Sipp warpers. Find out more about it by writing to Dept. WB.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

Guarantee TOP Performance and Maximum Life!

Specify THESE TOP QUALITY FEATURES...

(Standard on Miller Cylinders at no extra cost)

Specify CASE HARDENED CHROME PLATED PISTON RODS

On all Air and Hydraulic Cylinders

Benefits To You

CASE-HARDENED Piston Rods (52-54 Rockwell "C") provide practically complete protection against damage from hammer blows, wrench-dropping, mishandling, and similar occurrences. ***Available from Miller at no extra cost.***

The HARD CHROME PLATING over the case-hardened rods protects against scratch-damage and rust. ***Available from Miller at no extra cost.***

Specify "TEFLON" WIPERS

On all Air and Hydraulic Cylinders

Benefits To You

"TEFLON" Rod Wipers and "TEFLON" Hydraulic Piston Rod Seals withstand temperatures from—100°F. to plus 500°F. They are impervious to practically all known chemicals, including the fire-resistant, special, and standard hydraulic fluids in current use. ***Available from Miller at no extra cost.***

Specify TEFLON HYDRAULIC ROD SEALS

On all Hydraulic Cylinders

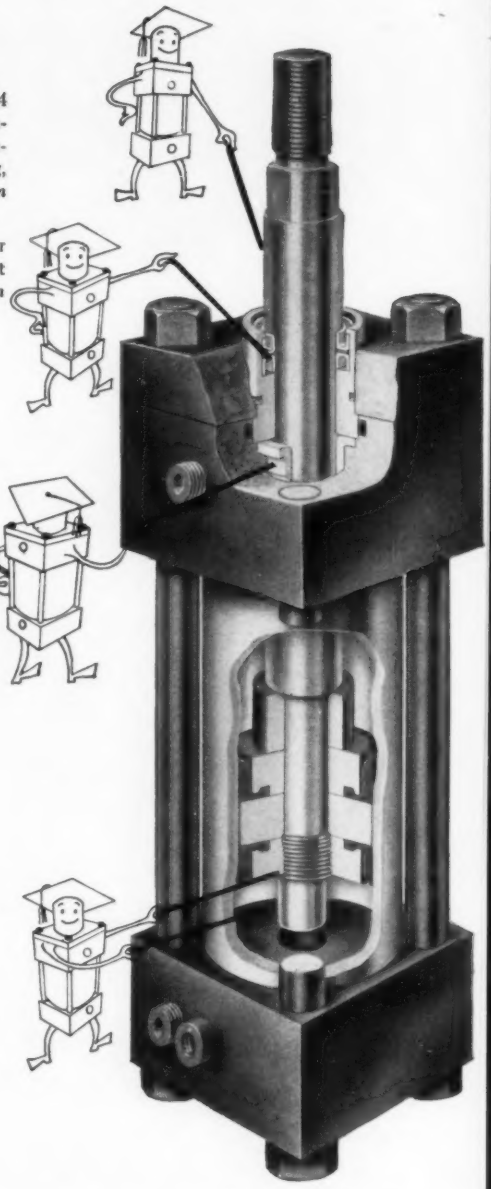
Specify RUST RESISTANT SURFACES

On all Air and Hydraulic Cylinders

Benefits To You

Highest quality Black Ferric Oxide Finish provides rust protection in air cylinder operation and on all cylinders during shipping and installation.

Cylinder heads, caps, mountings, pistons, followers, tie rods, and the unplated portions of the piston rods have this finish ***at no extra cost on all Miller cylinders.*** (This finish not recommended for water service)



NOTE: On all Miller Hydraulic Piston Seals: Leather Cup Seals are *standard*, Piston Ring Seals are optional at *no extra cost*, and "Teflon" Cup Seals are available *at extra cost*.

You may wish to route this entire page to the proper department in your company, by using this handy form. Additional copies on request. →

To (Dept.) _____

"On all our future cylinder requirements, please specify the above quality features."

Signed _____

Title _____

Member of the National Fluid Power Association

MILLER FLUID POWER DIVISION FLICK-REEDY CORP.

2042 N. Hawthorne Ave. Melrose Park, Ill.

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS

SALES AND SERVICE FROM COAST TO COAST

CLEVELAND • YOUNGSTOWN • DAYTON • TOLEDO • CINCINNATI • COLUMBUS
PITTSBURGH • PHILADELPHIA • BOSTON • HARTFORD • NEW YORK CITY
BUFFALO • ROCHESTER • MINNEAPOLIS • GRAND RAPIDS • DETROIT • FLINT
FORT WAYNE • SOUTH BEND • INDIANAPOLIS • MILWAUKEE • LOUISVILLE
KANSAS CITY • SEATTLE • LOS ANGELES • SAN FRANCISCO • BALTIMORE
DENVER • ST. LOUIS • MOLINE • CHICAGO • HOUSTON • ATLANTA
TORONTO, CANADA and OTHER AREAS

switch to

Caro-Gant

...the original 100% active warp dressing

Caro-Gant — tops in warp dressing — is a blend of specially processed fats, binding agents, penetrants and anti-mildew agents with absolutely no inert ingredients . . . every ounce of Caro-Gant works to make your warps stronger and more elastic, whether the weave is coarse or fine.

Caro-Gant disperses readily in hot starch solutions, contains no metallic chlorides and dissolves readily in kiering liquors or other boil-out mediums — giving you maximum economy, efficiency and quality.

Hart Products manufactures a wide range of textile chemicals for the textile industry.

Send for complete information on Caro-Gant and other Hartex products today.

HART PRODUCTS — BASED ON RESEARCH

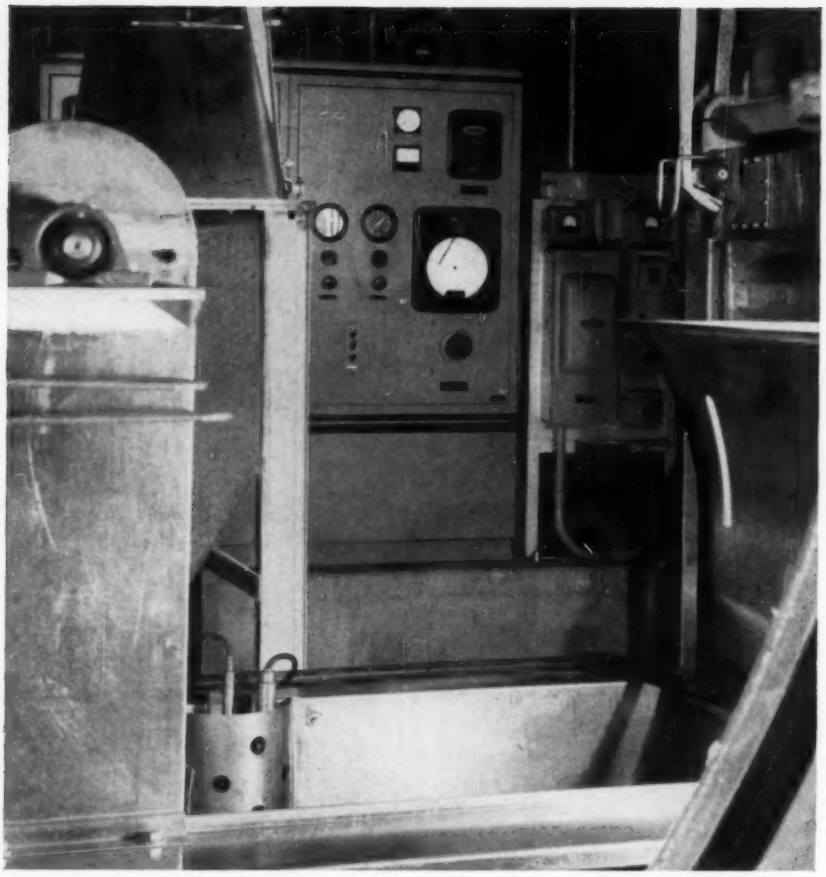
the Hart Products Corporation

1440 BROADWAY, NEW YORK 18, N. Y.

Works and Laboratories, Jersey City, N. J.

Hart Products Company of Canada, Ltd., Guelph, Ontario

Over 50 modern mills now save with—



Compact, cabinet-mounted installation of Foxboro Concentration Control for weak acid saturator in a large northern mill. Cabinet also contains Foxboro Temperature Controller and Pneumatic Loading Controls.

COMPLETELY AUTOMATIC CONTROL

For these and other important operations

Caustic	*Continuous Bleaching* *Continuous Desizing* *Dilution for other Processes*
Sulfuric Acid	*Souring after Desizing* *Souring after Mercerizing* *Wool Carbonizing* *Dilution for other Processes*
Sodium Hypochlorite	*Dilution for Bleaching*
Muriatic Acid	*Souring after Causticizing*
Acetic Acid	*Souring after Causticizing*

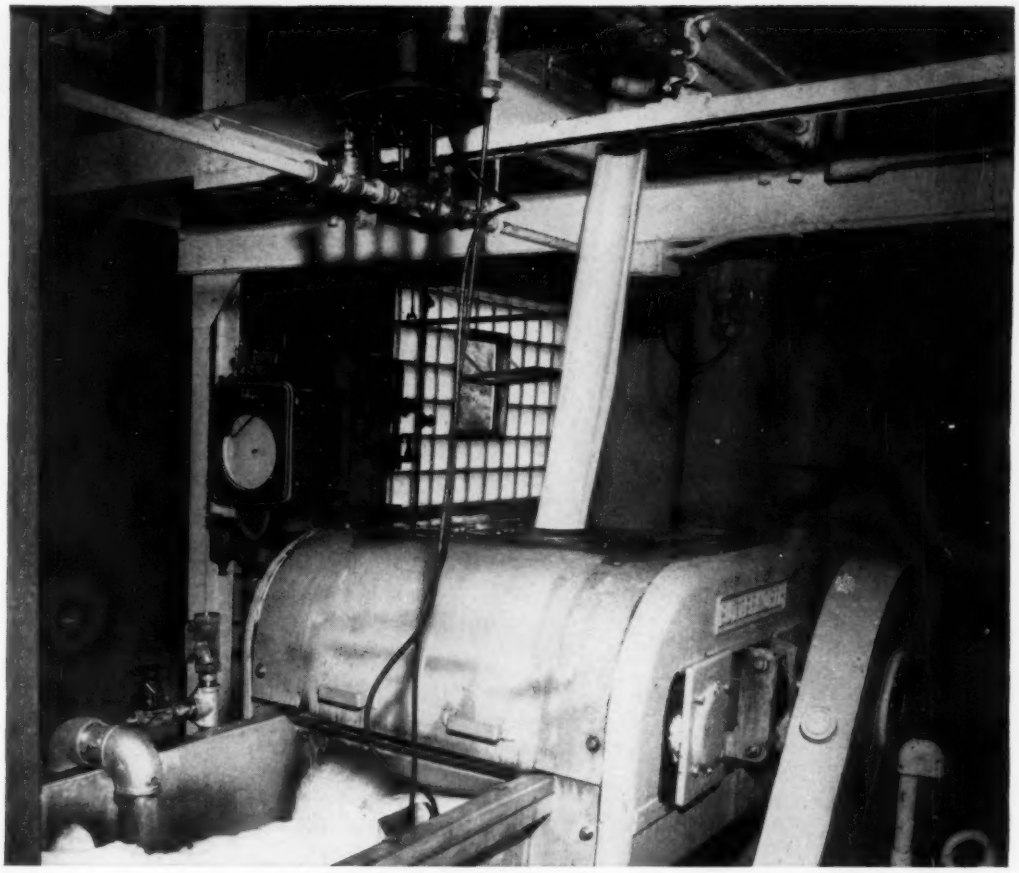
Savings in time, labor, and chemicals amounting to as much as $120 a week have been realized by leading mills through the use of Foxboro Concentration Control! This accurate, completely automatic system eliminates time-consuming manual checks. Once the Controller index pointer is set at the desired value, proper bath concentration is automatically maintained throughout the working period. What's more, *constant* Foxboro Control assures a *smooth* flow of chemical to the bath . . . prevents strong surges . . . frees personnel from hazard of handling strong chemicals.

Besides positive control action, the Controller provides a continuous chart record in percent concentration, °Be, or °Tw . . . proof of proper bath conditions and a foolproof means of duplicating them. Protect uniformity in your mill and save—with Foxboro Automatic Concentration Control. Write for full details. **The Foxboro Company, 4812 Neponset Ave., Foxboro, Mass.**

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND

FOXBORO INSTRUMENTATION

REG. U. S. PAT OFF.



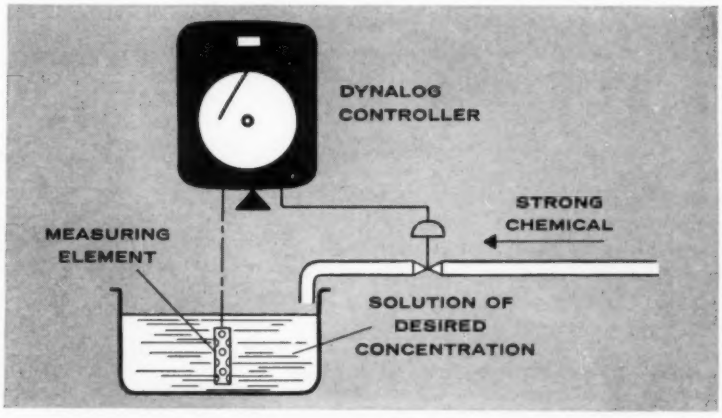
Foxboro Chemical Concentration Control in typical "at-the-machine" mounting serves caustic saturator for continuous bleaching range in one of largest southern bleacheries.

OF CHEMICAL CONCENTRATION

Simple, Dependable Control System

The rugged, highly accurate Foxboro Dynalog* Controller is used for this system. Its measuring element is a conductivity cell installed in the bath. Whenever bath concentration falls below proper value, control action instantly operates a valve in the feed line . . . automatically supplies the exact amount of strong chemical required. Controller is quickly adjustable for any concentration within its range.

*Reg. U. S. Pat. Off.



FOR TEXTILE PROCESS CONTROL

Photo Courtesy Sherman Manufacturing Co., Sherman, Texas

With the STROBOTAC *this is just what a spindle and balloon look like when revolving at any speed from 400 to 100,000 rpm!*

BOOST Spinning Room Efficiency with the **STROBOTAC®**

For the maintenance of uniform and correct spindle or traveler speeds, the G-R STROBOTAC® has proven ideal in thousands of mills.

The STROBOTAC requires no mechanical or electrical connection to the spindle or its shafting. It is simple to use, portable, light weight, accurate, low in price — and can be operated by anyone.

Defects such as slack or dirty bands and tapes, spindles that need oiling, crooked idlers, chokes in idlers . . . under spindles . . . on bolster . . . in bobbins; spindles out of plumb or worn or crooked; crooked bobbins, bad rings or worn travelers, ring rail not level, band and tape out of whorl, split and worn bobbins, uneven or mixed or oily yarn . . . these are only some of the troubles that can be detected quickly with the STROBOTAC.

For measuring speed, the STROBOTAC is calibrated to read directly in rpm from 600 to 14,500. By indirect measurements, speeds up to 100,000 rpm can be ascertained.

When used as a stroboscope, it is simple to make any rotating or reciprocating machine or part appear to revolve in s-l-o-w motion . . . even as slow as a fraction of an rpm . . . while the equipment is operating at normal speed.

Progressive mill officials are enthusiastic over the value of the STROBOTAC in reducing rejects, in increasing efficiency and forestalling troubles.

Write for Bulletin
STROBOSCOPE in TEXTILE MILLS

Type 631-BL
STROBOTAC, complete and ready for immediate operation, **$160.**

WE SELL DIRECT
Prices are net, f.o.b. Cambridge or West Concord, Mass.

Strobotac®

275 Massachusetts Avenue, Cambridge 39, Massachusetts

90 West Street **NEW YORK 6**
8055 13th St., Silver Spring, Md. **WASHINGTON, D. C.**
1150 York Road, Abington, Pa. **PHILADELPHIA**
920 S. Michigan Ave. **CHICAGO 5**
1000 N. Seward St. **LOS ANGELES 38**

Naugatuck Lotols
boost upholstery fabric values!

BACK-SIZING modern upholstery fabrics with just the *right* formulation of rubber or rubber-and-plastic latex adds value to the fabric out of all proportion to its meager cost. Specifically, it—

- **Anchors the weave, twist or pile**
- **Eliminates raveling of cut edges**
- **Improves body and hand**
- **Minimizes water spotting**
- **Prolongs wear**
- **Maintains dimensional stability**

Leading upholstery manufacturers depend on Naugatuck's tailored-to-order latex compounds to give their fabrics added value, aesthetically as well as physically!

Such a latex, custom-compounded in ready-to-use form by Naugatuck, is sold under the trade name LOTOL. And behind every LOTOL® is the know-how that belongs to the world's leading latex producer and compounder, plus the facilities of *three* modern compounding plants strategically located at Gastonia, Naugatuck and Los Angeles to save you shipping time and expense.

United States Rubber

Naugatuck Chemical Division

Naugatuck, Connecticut

BRANCHES: Akron • Boston • Chicago • Memphis • New York • Phila. • Mfg.: Los Angeles • Gastonia • Naugatuck • CANADA: Naugatuck Chemicals, Elmira, Ont.
Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices • Cable Address: Rubexport, N. Y.

Out of Chemstrand research comes a great new advance in filament nylon dyeing:

THE CHEMNYLE* PROCESS

For the first time in nylon history, nylon filament yarn can now be dyed to give both colorfastness and uniformity!

The dyeability of filament nylon yarn has always posed a dilemma. Under conventional dyeing methods, disperse dyes gave nylon good uniformity of dyeing but at the sacrifice of colorfastness. Conversely, the use of many acid and direct dyestuffs gave nylon high fastness properties but at the expense of uniform dyeing. This "either or" dyeability put heavy brakes on the expanding uses of nylon yarn.

Now Chemstrand research has resolved this dilemma with the development of the Chemnyle Process...*a new dyeing technique that gives continuous filament nylon excellent color uniformity and colorfastness simultaneously . . . a combination previously unobtainable.* Even when washed at temperatures of 160 degrees F. and higher, fabrics dyed by the Chemnyle Process show outstanding resistance to color loss . . . while improvements in lightfastness are also very substantial.

With the Chemnyle Process, nylon at last achieves a dyeability worthy of its other famed properties of strength, long wear, easy washing, fast drying. With the Chemnyle Process a broad range of end products can now be successfully dyed in fast color...thus opening up great new opportunities for the textile industry.

The Chemnyle Process is readily adaptable to all forms of existing dyeing equipment, is applicable to piece, stock and package dyeing and costs about the same as conventional dyeing processes.

For full information regarding licensing procedures, The Chemstrand Corporation invites mills and dyehouses to contact The Chemstrand Nylon Sales Dept. at 350 Fifth Ave., N. Y. 1.

CHEMSTRAND® NYLON

*Patent applied for.

THE CHEMSTRAND CORPORATION • GENERAL SALES OFFICES: 350 FIFTH AVE., NEW YORK 1 • DISTRICT SALES OFFICES: 3½ Overwood Road, Akron, Ohio; 4 Pearl Street, Dedham, Mass.; 222 South Church Street, Charlotte, N. C. • PLANTS: CHEMSTRAND® NYLON—Pensacola, Fla.; ACRILAN® ACRYLIC FIBER—Decatur, Ala.

It's simple as A B C

...whether you use it

in in or in

whether you buy it spot

or CONTRACT

to get traditional SOLVAY quality

... SOLVAY service... SOLVAY dependability

always specify

SOLVAY

HYDROGEN PEROXIDE

Aluminum Chloride • Vinyl Chloride • Caustic Soda
Potassium Carbonate • Calcium Chloride • Chlorine
Sodium Nitrite • Snowflake® Crystals • Chloroform
Sodium Bicarbonate • Methyl Chloride • Soda Ash
Caustic Potash • Hydrogen Peroxide • Ammonium
Chloride • Methylene Chloride • Monochlorobenzene
Ortho-dichlorobenzene • Para-dichlorobenzene
Ammonium Bicarbonate • Cleaning Compounds
Carbon Tetrachloride

SOLVAY PROCESS DIVISION

Allied Chemical

ALLIED CHEMICAL & DYE CORPORATION

61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

THE DIFFERENCE between various styles of travelers made for lubricated vertical rings, may be hard to see at a glance. But it's a very important difference.

Unless the traveler design is exactly right for the ring, much of the advantage of lubrication will be lost. Also, unless the design is exactly right for the yarn being processed, ends-down will cut production, and quality will suffer.

Whether you are running novelties like boucles, poodles, or seed yarns, — or twisting the heavier stocks normally processed on lubricated rings, Victor has the right vertical travelers to keep your production trouble-free.

You'll find it well worthwhile to check over your operations with a Victor Service Engineer. He can often show you that "headaches" you've taken for granted can be readily cured. Write, wire, or phone the nearest Victor office.

VICTOR VERTICAL TRAVELERS

representative of the styles commonly used on lubricated rings are described in this folder, with useful information on selection. Ask for Form VTN.

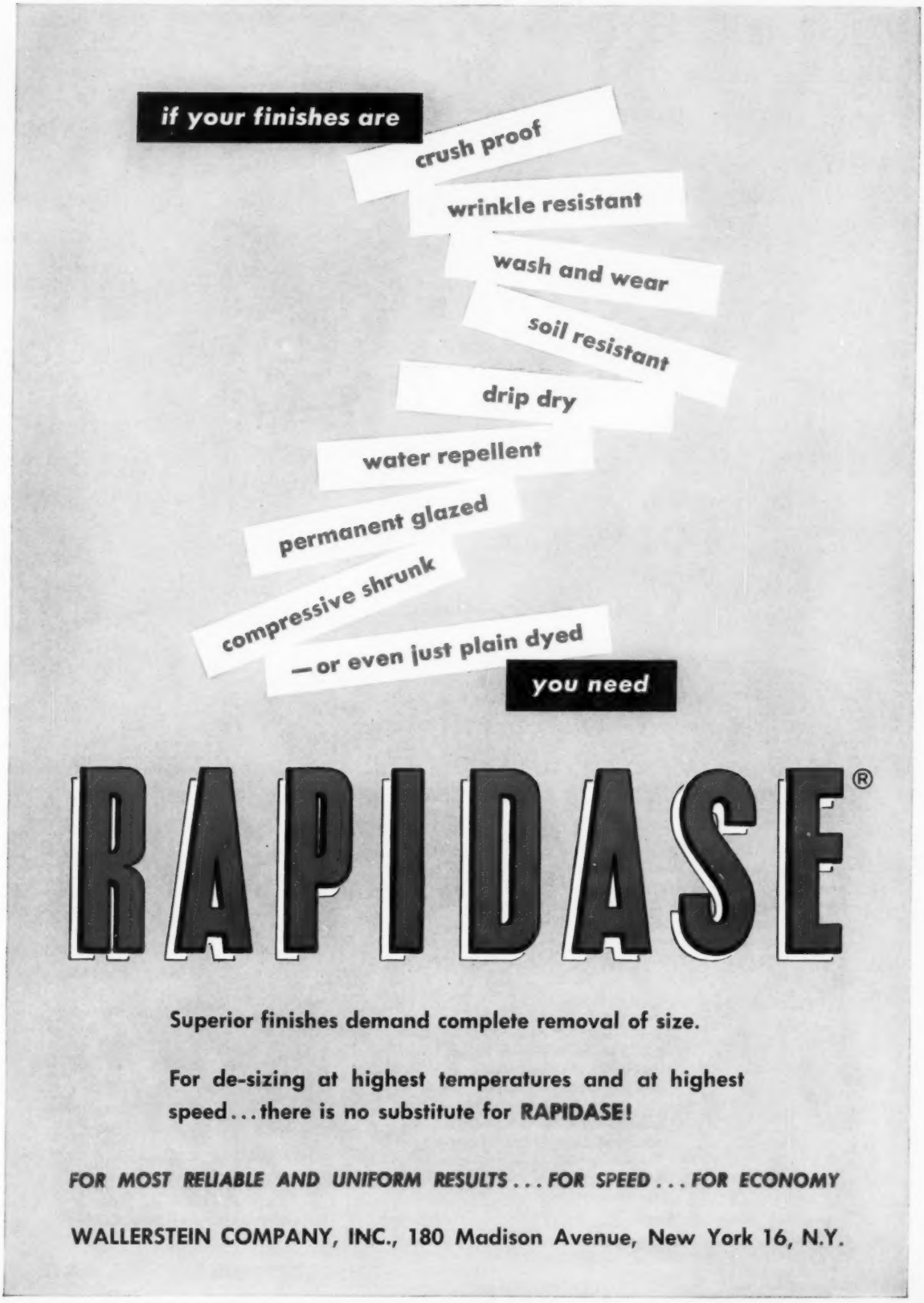
Keep a Step ahead with

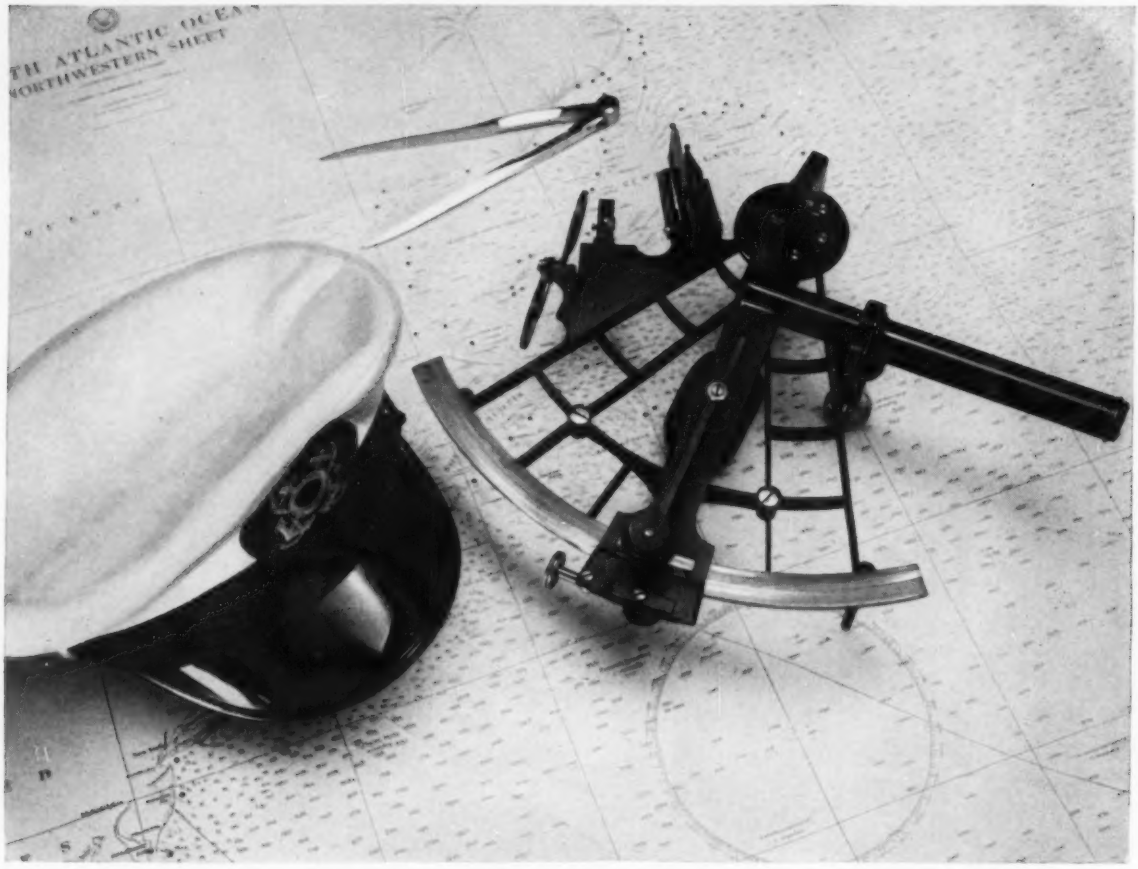
VICTOR Ring Travelers

VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . 20 Mathewson Street . . . . . Tel. DExter 1-0737

GASTONIA, N. C. . . . 914-916 East Franklin Ave. . . Tel. UNiversity 5-0891


if your finishes are
crush proof
wrinkle resistant
wash and wear
soil resistant
drip dry
water repellent
permanent glazed
compressive shrunk
—or even just plain dyed
you need
RAPIDASE®
Superior finishes demand complete removal of size.
For de-sizing at highest temperatures and at highest speed...there is no substitute for RAPIDASE!
FOR MOST RELIABLE AND UNIFORM RESULTS... FOR SPEED... FOR ECONOMY
WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York 16, N.Y.



A combination . . . for going places

Laminated plastics . . . a combination of properties for doing things

Synthane laminated plastics work for industry in so many different ways because of their unusual combination of mechanical, electrical and chemical properties. Engineers in practically every major industry have put Synthane's many combination properties to work . . . providing unusual strength and toughness, high insulation resistance, low moisture absorption, good dimensional stability, and excellent resistance to corrosive acids, alkalies, salts and solvents in a variety of products.

DIELECTRIC STRENGTH

IMPACT STRENGTH

HEAT RESISTANCE

LIGHT WEIGHT

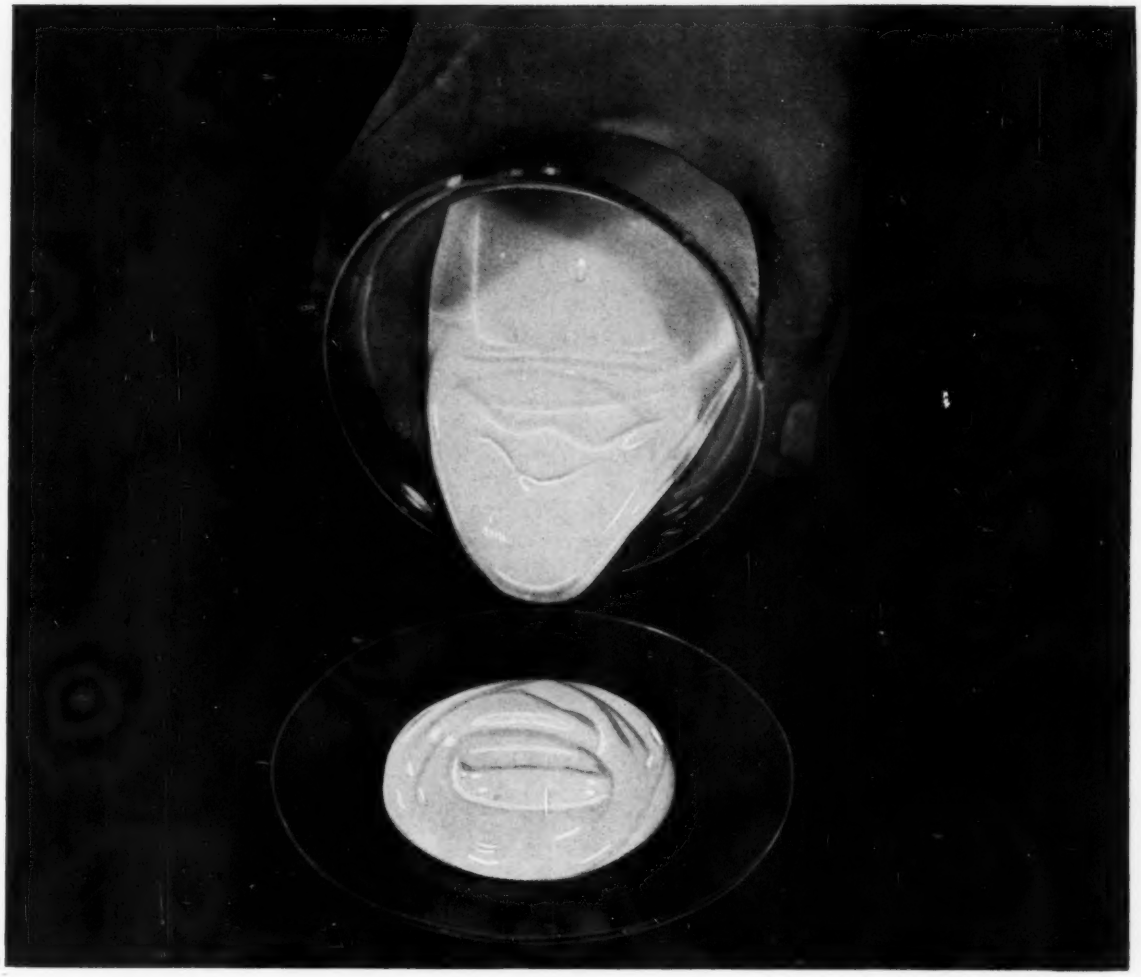
Redraw caps made of Synthane laminated plastic protect delicate yarns, last for years. Their super-smooth draw-off surfaces permit drawing of yarns from wooden or paper pirns from any angle without snagging. Snap rings fitted to redraw caps lock them securely in position. Synthane's properties in combination are also used in other textile components —such as, bobbins, pirns, headless package tubes, hosiery turning and examining forms, and sizing bobbins.

SYNTHANE

TECHNICAL PLASTICS

. . . send for complete catalog and fabricating data.

SYNTHANE CORPORATION, 9 RIVER ROAD, OAKS, PA.



ACRYSOL GS

Fabric backings go on easy and last long

A little bit of ACRYSOL GS thickener goes a long way in improving the backing of carpet and upholstery fabrics. First off, application is easier because ACRYSOL makes compounds unusually smooth in texture and exceptionally stable in viscosity. Secondly, the backing itself is better. That's because ACRYSOL GS provides a smooth coating with excellent resistance to aging, dusting, and unusual uniformity in application.

ACRYSOL GS is so widely compatible and such an efficient thickener that it can be used with many resins, latex emulsions, and filler ingredients. For still other backing systems, two new thickening agents are also available. ACRYSOL ASE-60, a non-linear thickener, provides high viscosity in small concentrations. ACRYSOL ASE-75, a linear thickener, is especially suitable for GRS rubber.

ACRYSOL is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.

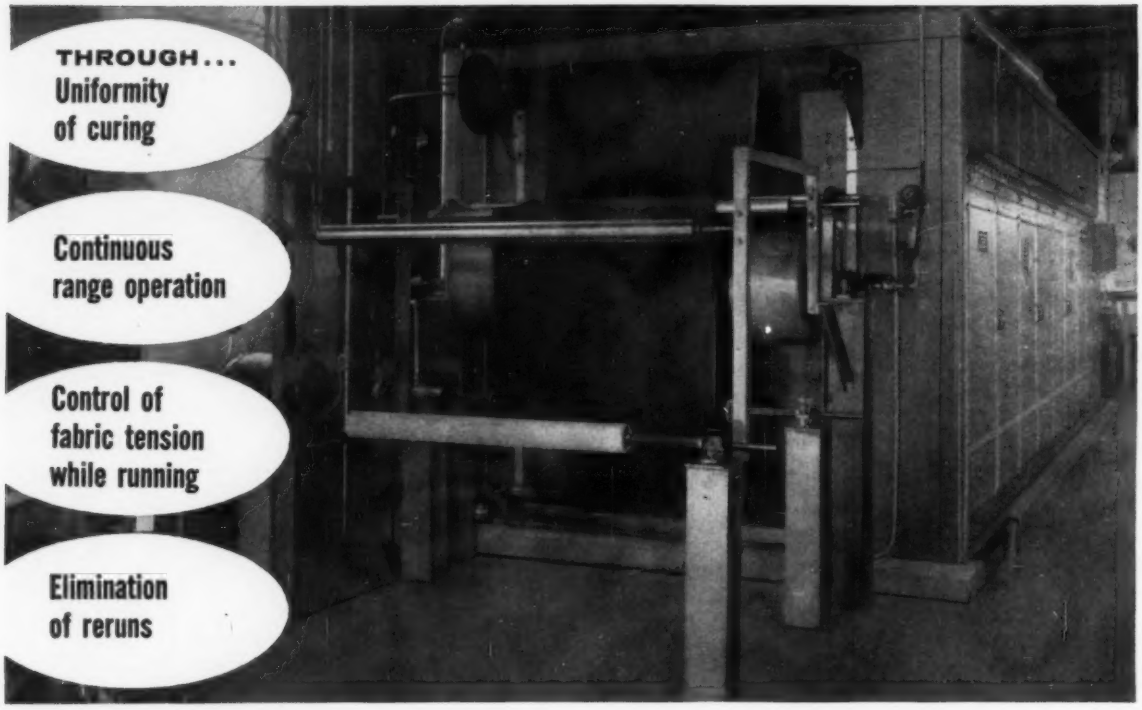
Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

the new PROCTOR ROLLER CURER



DOUBLES PRODUCTION *at* OXFORD*

NEW DESIGN FEATURES

New Proctor ✱ construction reduces installation costs, provides efficient, air tight and well insulated housing—smooth, easy to clean surfaces. Uniform air distribution promotes uniform curing without shading. Variable speed motors power each alternate top roller.

Tension can be adjusted from minimum to maximum while the machine is in operation according to the requirements of the fabric being cured.

Unique roll drive permits Roller Curer being placed in range operation with no change in present drive arrangement.

To find out about the complete "Oxford Story" as well as the advantages of a Proctor Roller Curer in your mill, write for latest information bulletin #412.

**The installation of a new Proctor Roller Curer together with rearrangement of existing facilities, has enabled the Oxford Finishing Company, Oxford, N.J., to increase production from 50,000 to 105,000 yards per day.*

PROCTOR EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR TUBULAR KNITS • EQUIPMENT FOR PRODUCING "SEDMANIZED"® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

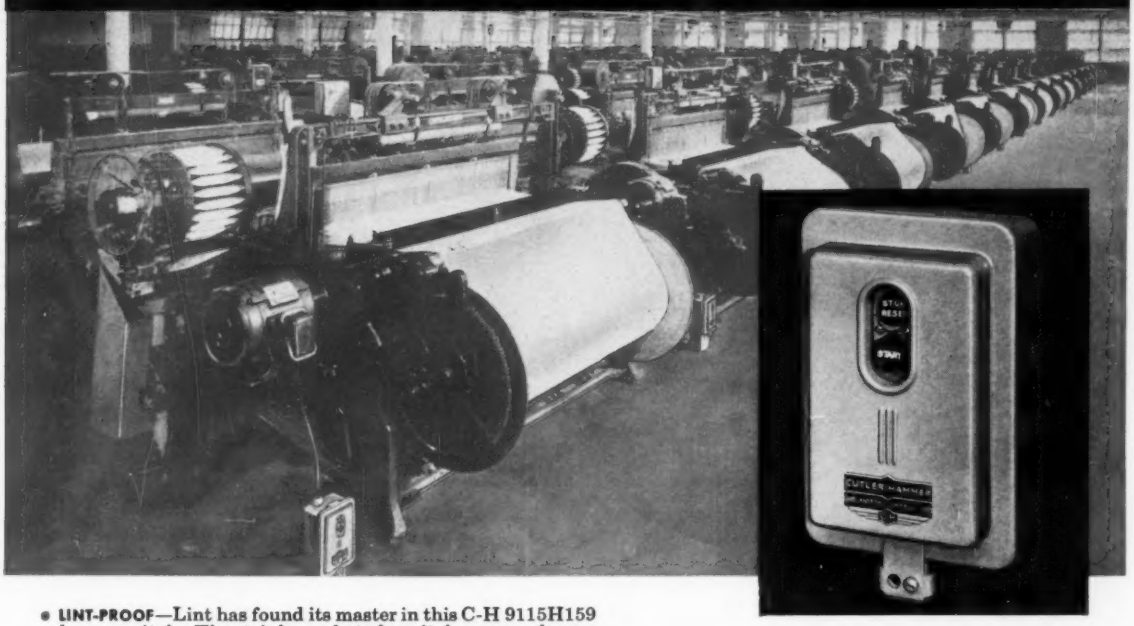
PROCTOR & SCHWARTZ, Inc.

PHILADELPHIA 20, PA.

Manufacturers of Textile Machinery and Industrial Drying Equipment

Proctor

KEEP YOUR LOOMS WEAVING with the DEPENDABLE CUTLER-HAMMER LOOM SWITCH



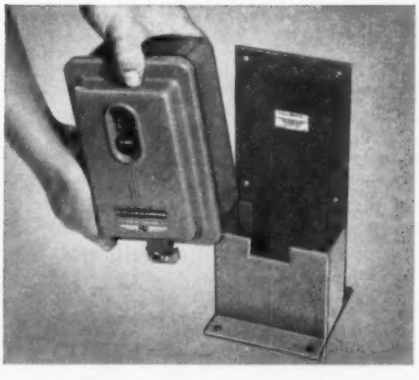
- **LINT-PROOF**—Lint has found its master in this C-H 9115H159 loom switch. The triple-gasketed switch cover clamps securely to the case and is drawn tight with a single captive cover screw.
- **DEPENDABLE OVERLOAD PROTECTION**—Every C-H loom switch features the famous Cutler-Hammer eutectic alloy overload protection. This free-tripping, tamper-proof overload protection will work the loom motor at top efficiency . . . safely. This amazing overload protection instantly senses a damaging overload, but eliminates nuisance tripping.
- **SHOCK & VIBRATION PROOF**—Inside and out, the rugged Cutler-Hammer Loom Switch is built to take it. The switch mechanism floats on live rubber bushings, sparing the mechanism from impact shocks and machine vibrations. A steel framework supports the all-steel operating mechanism . . . all enclosed in a tough, drawn steel case and cover.
- **EASIER INSTALLATION & INSPECTION**—Loosen a single captive cover screw to separate the cover from the case . . . the cover is out of the way and can't interfere while wiring. All terminals are out-front where you can get at them and are clearly marked for rapid identification and positive wiring. Heater coils are easily inserted and marked for accurate selection.
- **RESISTS CORROSION**—The Cutler-Hammer Loom Switch uses plated steel members and springs of stainless steel to resist corrosion. The case and cover are bonderized, assuring a lifetime of rust resistance even in the high temperature and humidity of the weave room.

Ask your Authorized Cutler-Hammer Distributor to show you this Cutler-Hammer Loom Switch. Compare it with any other and you too will agree, "For dependable loom performance—use C-H control."

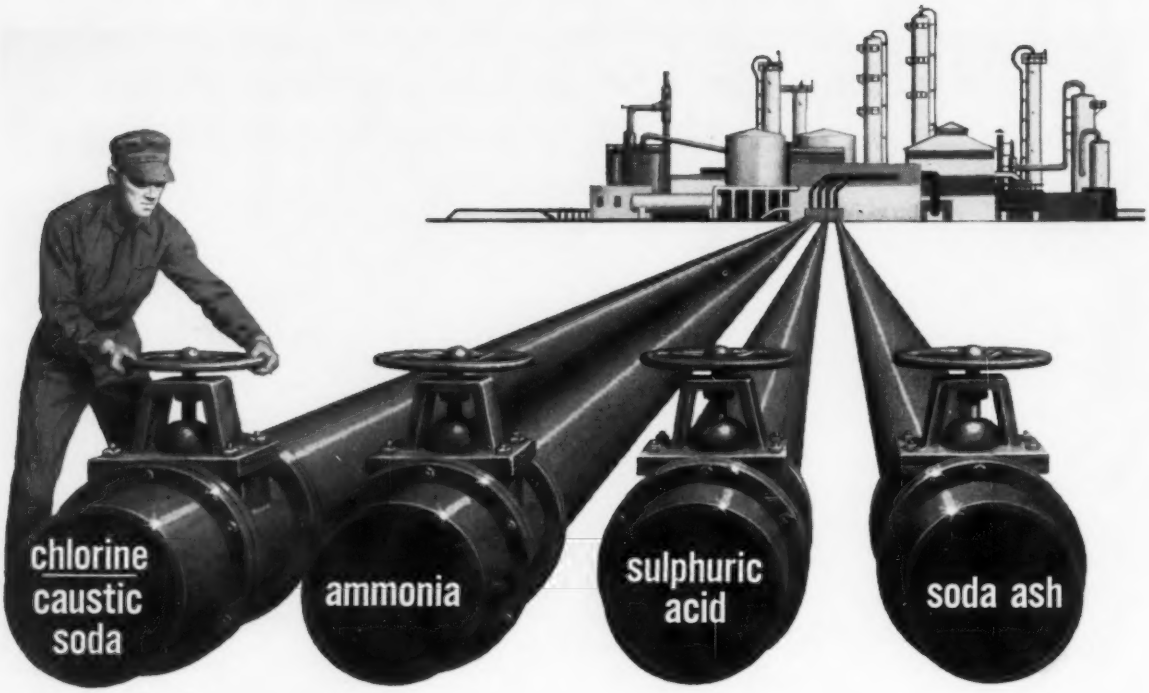
CUTLER-HAMMER, Inc., 1456 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER
MOTOR CONTROL
C-H

- **LINT-PROOF**
- **DEPENDABLE OVERLOAD PROTECTION**
- **SHOCK & VIBRATION PROOF**
- **EASIER INSTALLATION & INSPECTION**
- **RESISTS CORROSION**
- **HIGH-BACK STEEL PEDESTAL**



- **HIGH-BACK STEEL PEDESTAL**—This high-back, steel pedestal provides a solid foundation for floor mounted loom switch . . . it supports the switch from top to bottom, not just at the bottom. Being made of steel (not cast iron) it won't crack off when accidentally struck by a warp truck or kicked.



you can be on our "pipe line"

Want to smooth out your chemical supply problems? Tap into the Olin Mathieson "pipe lines." You'll see what our multi-plant production facilities can mean to you.

The effect of a number of producing points is to balance out local shortages and surpluses. In one instance, a serious chlorine shortage on the Gulf of Mexico was relieved by an excess in Canada. Each of the five plants between shipped into the next plant supply area to the South, setting up a chain reaction which released the needed tonnage on the Gulf.

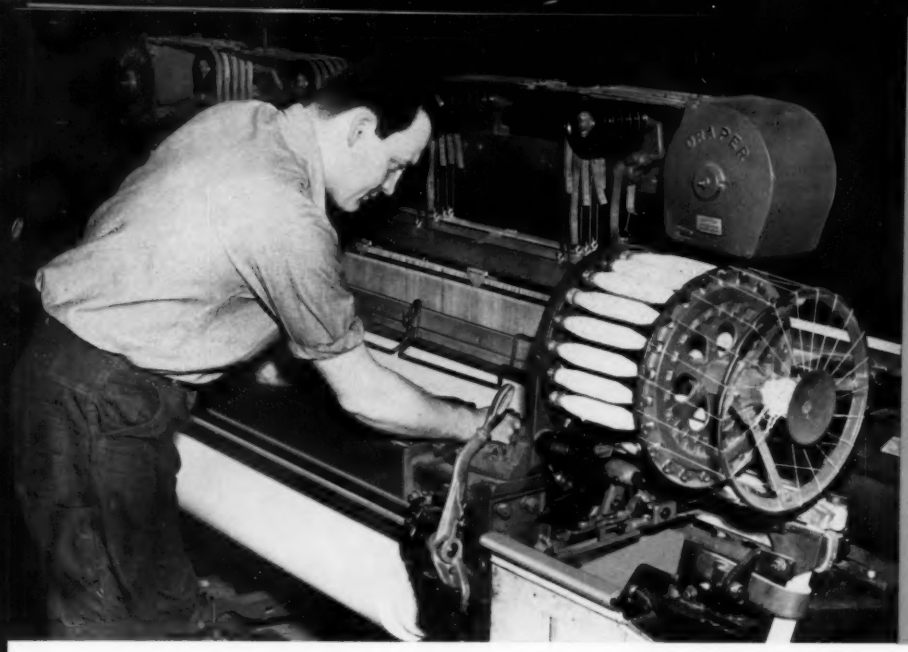
Our combination of multi-plant facilities and an imaginative approach to the logistics of the chemical industry can prove invaluable to you. Discuss it now with an Olin Mathieson representative or write the Chemicals Executive Office in Baltimore.

MATHIESON

MATHIESON CHEMICALS
OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

4128

INORGANIC CHEMICALS: Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Potash • Caustic Soda • Chlorine • Hydrazine and Derivatives • Hypochlorite Products • Muriatic Acid • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sulphate of Alumina • Sulphur (Processed) • Sulphuric Acid
ORGANIC CHEMICALS: Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Glycol Ether Solvents • Ethylene Dichloride • Dichloroethylether • Formaldehyde Methanol • Sodium Methylate • Hexamine • Ethylene Diamine • Polyamines • Ethanolamines • Trichlorobenzene • Polychlorobenzene • Trichlorophenol



No. 12 of a Series

DRAPER LOOM FIXING

Setting Instructions for Shuttle Boxes

Proper setting of Shuttle Boxes improves loom operation and reduces down-time. Periodic checks of Shuttle Box condition is recommended.

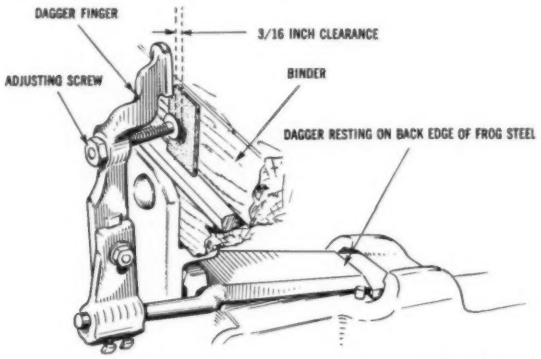


Fig. 1

NOTE: Correct application of Shuttle Boxes requires the use of Draper Front Box Plate Gauge as described herein and in gauge list Setting Instruction No. 555.

Before Shuttle Boxes are adjusted, check bolts in Protector Rod Bearings and set screws in Dagger Fingers, making sure that all are tight.

With Shuttle out of loom, set both Daggers to rest on the back edges of the Frog Steels (See Fig. 1). Set adjusting screws in Dagger Fingers to clear Binder by 3/16 of an inch. Replace the Shuttle in the Box and Set Dagger Stop to prevent over-action of the Daggers, avoiding cramping of the Shuttle Box. To obtain a setting using Front Box Plate Gauge, set Daggers to rest on back edges of Frog Steels as above. Place gauge in position under Dagger as shown in Setting Instructions No. 555 and No. 533-538. Place Shuttle all the way in Shuttle Box and adjust Dagger Finger Adjusting Screw until it contacts Binder.

Set Picker End of Front Box Plate so that spur of the Shuttle is central with the Picker Stick Slot in the Lay End. In making further adjustments of the Shuttle Boxes, this setting should not be altered more than is necessary. Check Picker to make sure that the hole in the Picker is in line with the spur of the Shuttle.

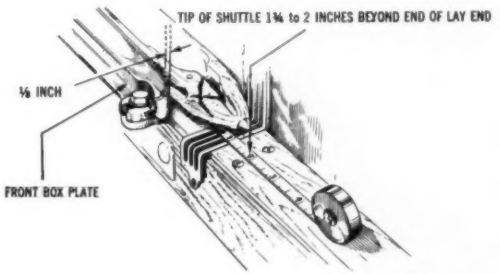


Fig. 2

Move Shuttle until Tip toward center of loom is from 1-¾ inches to 2 inches beyond end of Lay End. (See Fig. 2). With the Shuttle against back of Box, set inner end of Front Box Plate about ⅛ inch from Shuttle. When making this setting, insert Front Box Plate Gauge between Shuttle and Front Box Plate to make sure of obtaining proper clearance. Adjust Binder Bushing so that Daggers will just clear the Frog Steels.

DRAPER CORPORATION

Advertising Department (TI 12)
Hopedale, Massachusetts

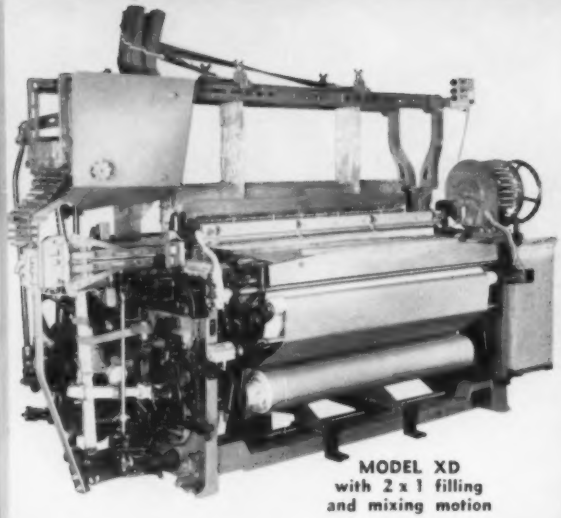
Please send complete Setting Instruction No. 533 and No. 538 "Shuttle Boxes."

Name_____

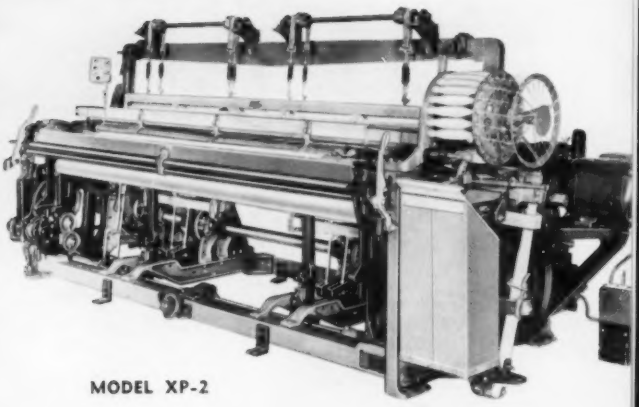
Position_____

Company_____

Address_____



MODEL XD
with 2 x 1 filling
and mixing motion

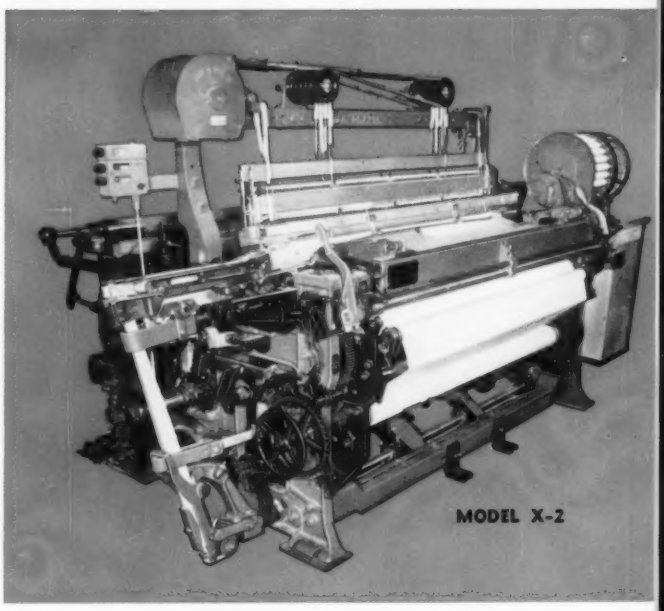


MODEL XP-2

DRAPER LOOMS ARE THE WORLD'S FINEST SINGLE SHUTTLE LOOMS

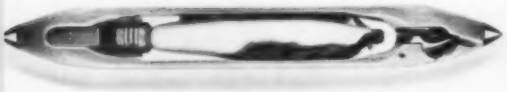
Draper High-Speed Automatic Looms, featuring many new developments, are today's accepted standard for production, economy and versatility in weaving. Available in several models and widths, Draper looms are currently in use in textile mills throughout the world.

Draper looms, accessories and repair parts reduce weaving costs.



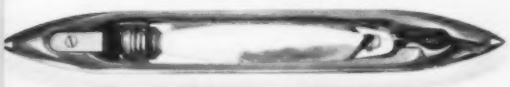
MODEL X-2

TRU-FLIGHT SHUTTLE

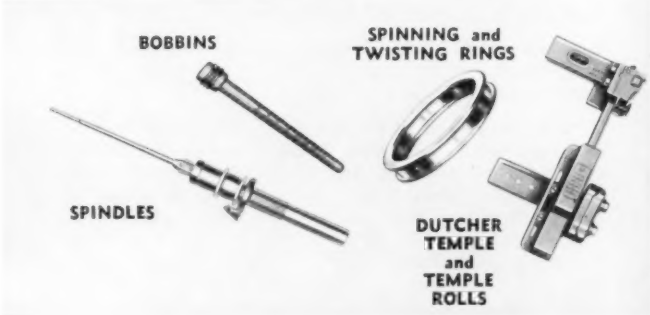


TRU-FORM SHUTTLE

TRU-MOLD SHUTTLE



DRAPER PARTS AND ACCESSORIES FOR BEST PERFORMANCE



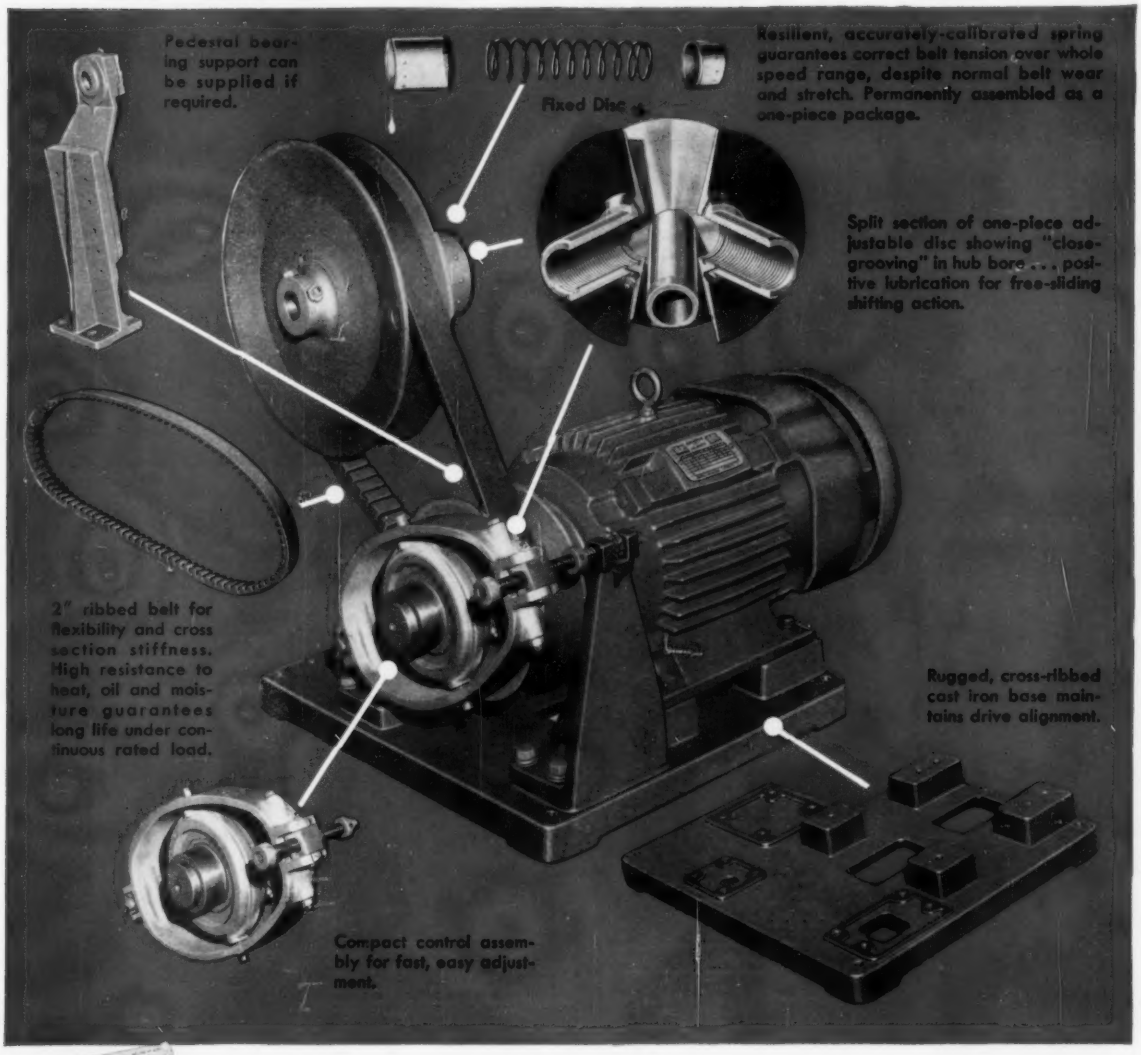
DRAPER CORPORATION / HOPEDALE, MASS.

ATLANTA, GA. GREENSBORO, N. C. SPARTANBURG, S. C.

REEVES Vari-Spin®

MILL TESTED AND PROVED

Spinning Frame Drive: The drive that reduces fixer labor costs, increases spinning production, quantity and quality! 7½ to 15 hp! Any speed setting from 500 to 1450 rpm. at cylinder shaft . . . in *seconds . . . while frame is running!*


Pedestal bearing support can be supplied if required.
Fixed Disc
Resilient, accurately-calibrated spring guarantees correct belt tension over whole speed range, despite normal belt wear and stretch. Permanently assembled as a one-piece package.
Split section of one-piece adjustable disc showing "close-grooving" in hub bore . . . positive lubrication for free-sliding shifting action.
2" ribbed belt for flexibility and cross section stiffness. High resistance to heat, oil and moisture guarantees long life under continuous rated load.
Rugged, cross-ribbed cast iron base maintains drive alignment.
Compact control assembly for fast, easy adjustment.

For complete rating data and dimension charts, write for Bulletin T27a-G561.

REEVES PULLEY COMPANY

DIVISION OF **RELIANCE** ELECTRIC AND ENGINEERING CO.

Columbus, Indiana

For further information use Handy Return Card, Page 193

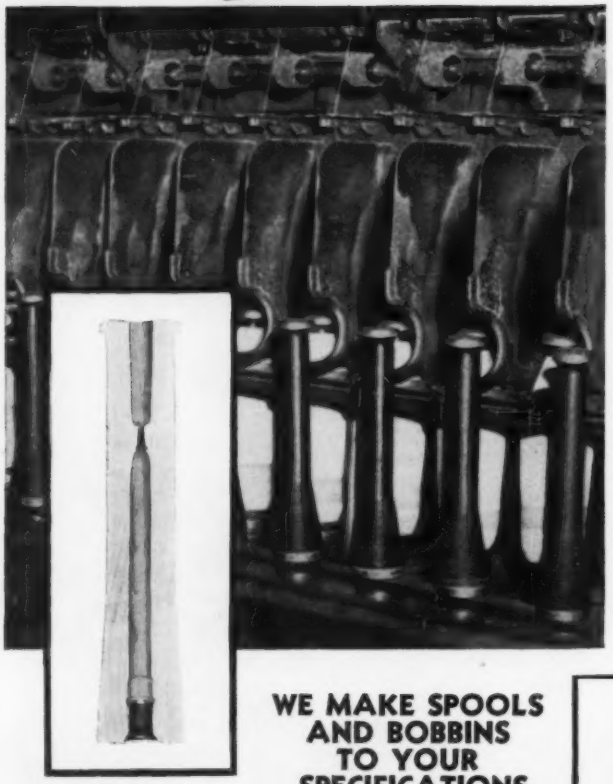
VERMONT SPOOL AND BOBBIN CO.'S

LITTLE BRASS BUSHINGS

THAT

SAVE YOU BIG MONEY

UNIQUELY CRIMPED BUILT-IN BUSHINGS PREVENT DRAG AND PULL . . . EVEN AT HIGH SPEEDS!



Cross section view showing machining details and bushings.

The Vermont Spool and Bobbin Company offers you a bobbin with extra value at a low competitive price! Crimped, built-in brass bushings keep bobbins free-running despite high speeds. Bobbins are given a seven-day baked enamel cure which seals moisture out, and, as an extra precaution, the cores are reamed. This prevents the bobbin from grabbing the spindle, should slight swelling occur.

Start saving with Vermont spools and bobbins. Contact your nearest Vermont Spool and Bobbin Company representative or write us today!

WE MAKE SPOOLS AND BOBBINS TO YOUR SPECIFICATIONS

FIVE FEATURES YOU WANT

- LONGER LIFE
- TRUE, FREE-RUNNING
- BRASS BUSHINGS
- SKILLED WORKMANSHIP
- COMPETITIVE PRICE

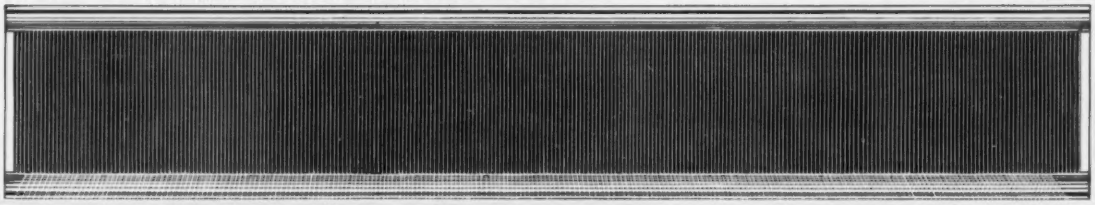
Represented in the East by Atkinson, Haserick & Co., Boston 6, Mass., and Watson & Desmond, P.O. Box 1954, Charlotte, N. C.

Vermont SPOOL AND BOBBIN CO.

234 SO. CHAMPLAIN ST. — BURLINGTON, VERMONT — *SUPERIOR SPOOLS AND BOBBINS SINCE 1906*

Specify Stehedco Quality Reeds

The proof of a good reed is in the woven cloth.



Your reeds play an important part in the economical production of first quality goods. Be sure they are good reeds and you can be more sure of better quality production.

Stehedco Quality Reeds are constructed of the finest materials by master craftsmen. Stehedco plants are located strategically to assure you quick delivery as well as fine quality reeds.

Stehedco engineering brings you four new improvements in reed construction . . . four new reeds that have proved revolutionary in producing better quality with greater economy.

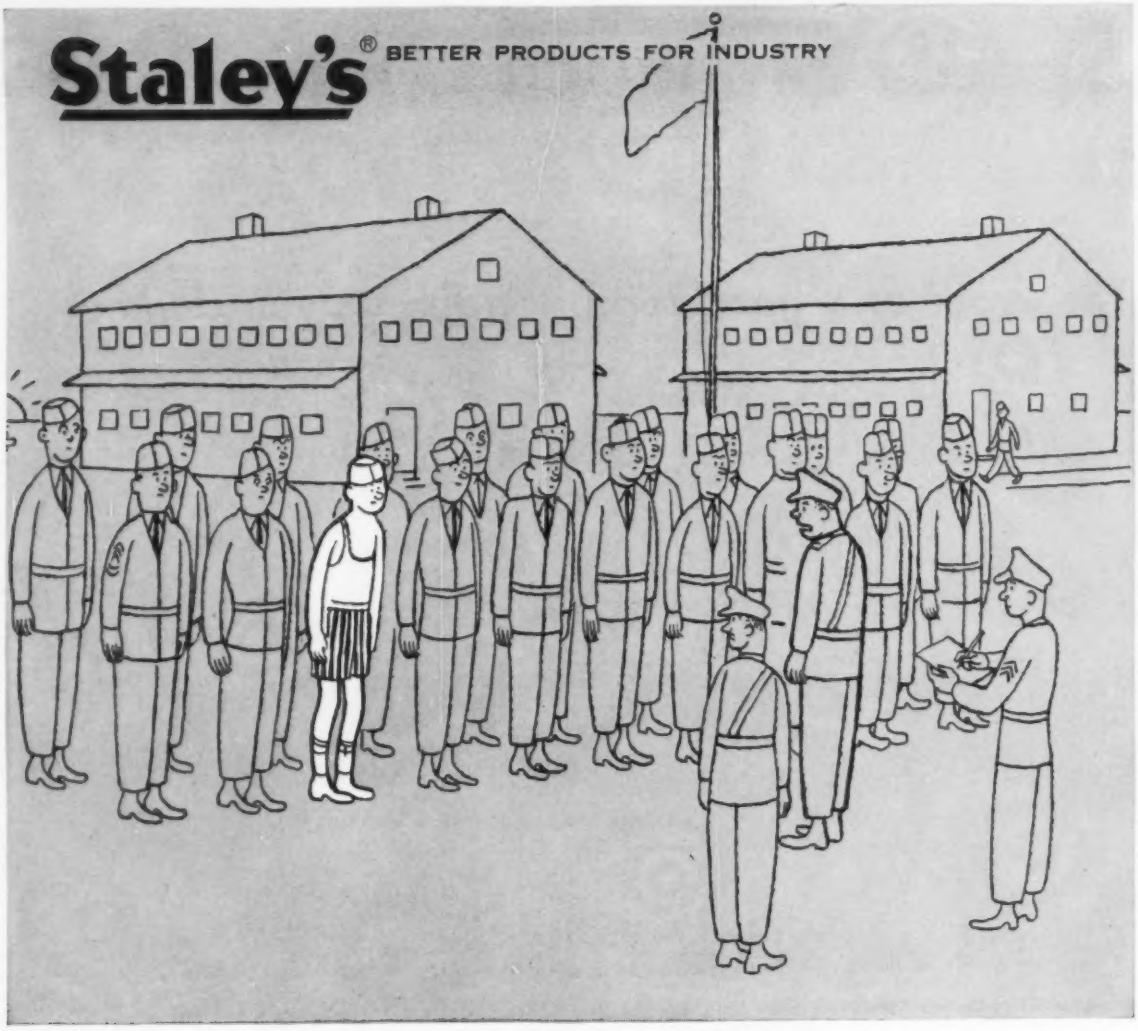
Write today for the new Stehedco Reed Catalog featuring the new Angle Dent Reeds, Loose Spring Reeds, Rigid Metal Reeds and Rigid Pitch Reeds.

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

10-R-56

Staley's® BETTER PRODUCTS FOR INDUSTRY



Nonuniformity spoils the line . . .

Uniformity means quality! All along the line, the ingredients you use will affect your final product. *You can't afford to be caught out of uniform!*

That's why you should know about Staley's exclusive new process for manufacturing STADEX Dextrins. This process marks a new high in even conversion, a new low in percentage of residual products. Whether your requirements call for White, Canary, or British gums, Staley's new Stadex Dextrins assure you of *complete uniformity, highest quality, and minimum color in a full line tailored to your exact specifications.*

Get full details now from your Staley Sales Technician or write us today.

Stadex®

A. E. Staley Manufacturing Company, Decatur, Illinois

Branch Offices: Atlanta • Boston • Chicago • Cleveland • Kansas City • New York • Philadelphia • San Francisco • St. Louis

50th ANNIVERSARY YEAR

PRODUCTS FROM CORN **Staley's** AND SOYBEANS

QUALITY TEXTILE PRODUCTS

Dextrins
Pearl Starches
Thin Boiling Starches
Specialty Gums

"GULFSPIN keeps our spindles spinning clean and free"

*says T. F. Snipes, Overseer of Spinning of this prominent southern mill**

"WE have used Gulfspin for almost three years and have found that our 34,000 spindles stay clean with practically no sticking," says Mr. Snipes. "Also Gulfspin doesn't thicken after long usage."

In addition to the benefits mentioned above, Gulfspin provides effective protection against rust—and it reduces power costs because of its ability to maintain its original viscosity after many months of service.

You'll find that the use of Gulfspin will contribute to smoother spindle operation, fewer ends down, and rock-bottom maintenance and power costs.

Contact a Gulf Sales Engineer and let him demonstrate Gulfspin's superiority on your frames. Consult the telephone directory for the number of your local Gulf office. Visit the Gulf Booth—No. 211—at the Southern Textile Exhibition, Greenville, South Carolina.

**Name furnished upon request.*

GULF

GULF OIL CORPORATION • GULF REFINING COMPANY

1822 Gulf Building, Pittsburgh 30, Pa.

NEW EMERSOFT® 7700

gives you smooth, full-bodied softness ...yet saves you dollars!

An efficient, high-quality, nonionic softener, Emersoft 7700 will give your cottons a full-bodied, soft hand at a low cost per yard. Effective also as a top-softener it improves the sewability of resin-finished fabrics.

Emersoft 7700 further provides a lustrous, smooth-faced finish, possesses outstanding resistance to yellowing and scorching, is easily handled, and does not waterspot.

For details on *all* the features of Emersoft 7700 and suggested formulations, mail coupon below.

Emery Organic Chemical Sales Department

Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio

Emery Industries, Inc.
Dept. T-12, Carew Tower
Cincinnati 2, Ohio

Please send me a copy of bulletin titled "Emersoft 7700".

Name ..... Title .....

Company .....

Address .....

City ..... State .....

Tuffer Card Clothing

You may have the very best cards in the world . . . but is your Card Clothing properly engineered to obtain maximum production of top quality fabrics? Remember, it is your Card Clothing that does the actual work.

Howard Bros. Engineering and Research Laboratory is devoted exclusively to the development of Card Clothing that meets, in every detail, your particular needs . . . "tailor-made" Card Clothing that guarantees **the utmost in efficient production** of high quality fabrics.

Your inquiry involves no obligation.

C-2

Manufacturers of Card Clothing for 90 years
1866-1956

Tuffer

HOWARD BROS.

WORCESTER 8, MASSACHUSETTS
Southern Plants: Atlanta, Ga., and Gastonia, N. C.
Direct Representation in Canada

TUFFER PRODUCTS Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing and Brushes • Top Flats re-covered and extra sets loaned at all Plants • Lickerins rewired at Southern Plants • Hand Stripping Cards

You get good fibre lay and a tough, smooth size film with...

GLOBE® PEARL STARCHES

Operator notes more uniform film applied by Globe Pearl Starch.

Globe Starches are clean and uniform. You can depend on them to produce a high grade warp.

The viscosity of Globe thick boiling starches stays constant during continuous pumping and circulation, giving maximum warp strength and weavability.

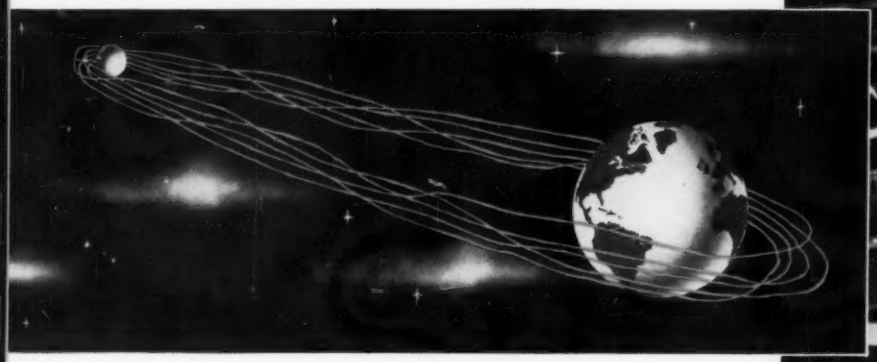
Globe brand starches are particularly indicated on heavy goods. Shedding can be minimized and chafing practically eliminated by the tough size film you get with Globe. Also, there are special Globe Starches for use in homogenizers, which give excellent results.

Ask the man from Corn Products. Ready to assist you in any way, he has at his disposal the most complete laboratory and technical facilities in the industry. The man from Corn Products can also provide engineering service for the installation of bulk-handling equipment. Write or phone for information, there is no obligation.

1906 • **50th ANNIVERSARY** • 1956
CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.

Corn Products makes these famous starches for the textile industry—
Eagle • Foxhead • Globe • Hercules • Ten-O-Film • Globe Dextrines & Gums

10 billion yards to dye...



so few men to do it!

Fewer than 5,000 chemists and dyers combine art, science and industry all in one to add the important appeal of color to our tremendous annual output of textiles.

The magnitude and complexity of the job emphasize the vital function of the dyestuff maker whose responsibility goes beyond the simple sale of color by the pound.

National meets this responsibility with a line of nearly a thousand dyestuffs. We anticipate your needs with stocks of dyes in current demand, nearby and ready for fast shipment.

Ten application service labs coast-to-coast handle match requests speedily. Our representatives are technically trained to render practical help with application problems in the mill.

Our Color Standardization Control Laboratory assures the uniformity of every shipment.

And our multimillion-dollar Buffalo Research and Engineering Center works constantly to improve application methods and develop better dyes.

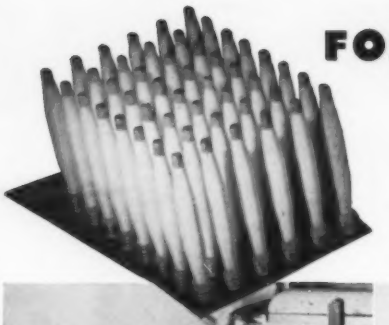
When you buy dyestuffs from National Aniline you enlist vast technical resources and specialized experience that are extremely valuable—and included in the price you pay for dyestuffs! That's why it's always good business to do business with National.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

Boston Providence Charlotte Chicago San Francisco Los Angeles Portland, Ore. Greensboro Philadelphia Richmond Akron Atlanta Columbus, Ga. New Orleans Chattanooga Toronto

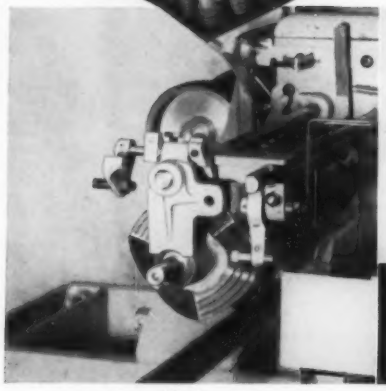


FOSTER-MUSCHAMP Model 66*

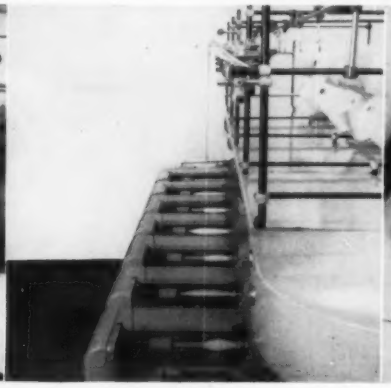
Automatic Filling Winder

A NEW HIGH IN WINDING QUALITY
A NEW LOW IN WINDING COSTS

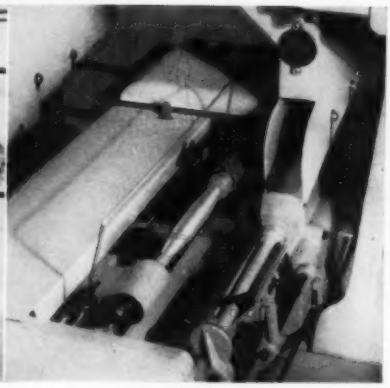
*Manufactured in Westfield, Mass.



No. 1



No. 2



No. 3

THE WHY OF QUALITY WINDING

The features of the Model 66 which contribute to quality winding, the protection of delicate yarns and better weaving are: — a progressive shock-proof start of winding spindles; a cam design (Fig. 1) which enables the operator to place all knots behind the traverse and on the outside of the bobbin; straight line delivery of yarn from tension to thread guide (Fig. 2) (the angle of the yarn entering traverse guide does not exceed 10° from start to finish of bobbin); feeler-less build (Fig. 3) — a diameter control mechanism advances the traverse without contacting the yarn and lays the yarn on the bobbin in a predetermined and precise arrangement; automatic pinboarding (Fig. 4) — yarn is not touched by human hands, after creeling, until it reaches the loom, except when piecing up.

The foregoing is accomplished with a "new low in winding costs" — as low as ¼¢ per lb. in many cases. A contributing factor to this "new low" is an unmatched spindle speed of 15,000 R.P.M. This super speed is possible and practicable because of the cam design which reduces the cam speed to ⅓ that of a conventional cam at equivalent winding speeds.

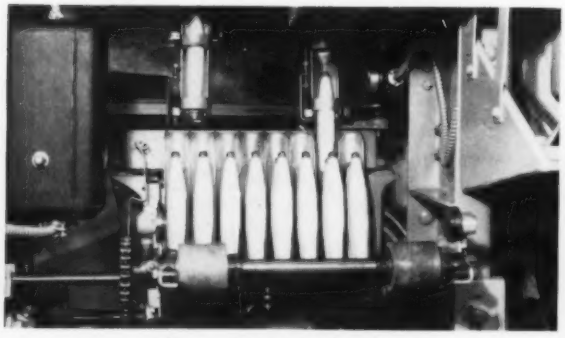
Why wait? Delay is costing you money. Start investigating now. Send for new Bulletin M-4A. No obligations.

FOSTER MACHINE COMPANY

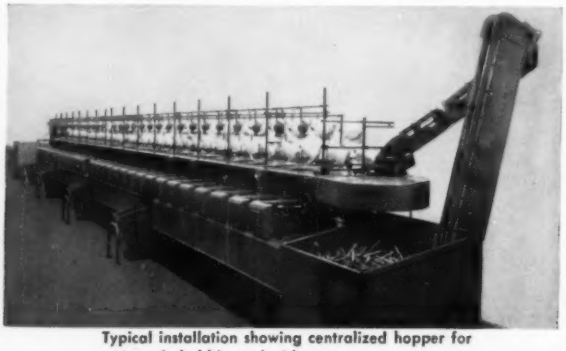
Westfield, Massachusetts, U. S. A.

Southern Office — Johnston Bldg., Charlotte, N. C.

Canadian Representative — Ross Whitehead and Company Limited, 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.



No. 4 — Automatic pinboarding



Typical installation showing centralized hopper for automatic bobbin replenishment.

News IN BRIEF

Bureaucrats Qualified? R. Buford Brandis, chief economist of the American Cotton Manufacturers Institute, has suggested that Congress check the technical and professional qualifications of government personnel who handle trade

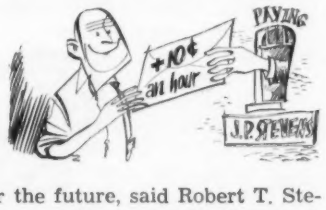
negotiations of potentially serious effect on U. S. business and industry. Dr. Brandis had particular reference to the negotiators who took part in last year's GATT conference at Geneva. He emphasized that personnel who are ill-qualified and lack adequate facts as to the industry's situation can unintentionally jeopardize jobs, investments, and the welfare of communities under the present trade negotiating procedures.

Automation for Small Business. The nation's small and medium-size businesses — those with 1000 employees or less — can best profit by automation, says Henry F. Dever of Brown Instruments Division, Minneapolis-Honeywell Regulator Co. Small businessmen who have to co-exist with large companies in an automatic world can use automation as the key to "economic survival." Contrary to popular belief, it does not take two or three million dollars "to get your feet wet in automation." There are a host of instruments for sensing, controlling, and reporting on production conditions that can be purchased at costs ranging from $50 upward, according to Mr. Dever.

USDA Studies Summer Fibers. The U. S. Department of Agriculture has started a survey to determine what fiber men prefer in summer clothing. Complete results will not be published until late 1957 or early 1958, but preliminary findings will be released in the meantime.

Wool Use Gains. Mill use of apparel wool rose 9 per cent during the first seven months of 1956, compared to the like period of last year, reports the Wool Bureau. Woolen system consumption increased 4 per cent, while worsted system usage rose 15 per cent. Trade stocks of apparel wool were 103 million pounds (excluding wool in bond), clean basis, on September 1, the lowest postwar level for that time of year.

Stevens Confident. The action of the government in working out a solution of the Japanese textile import problem provides assurance



for the future, said Robert T. Stevens, president of J. P. Stevens & Co., Inc., in announcing a wage increase averaging 10 cents an hour in its 35 southern plants.

Escape Clause a Delusion. The "escape clause" of the Trade Agreements Act is largely a "snare and a delusion," says Edwin Wilkinson, executive vice-president of the National Association of Wool Manufacturers. "Reduced to its simplest terms, the escape clause provides for the withdrawal of a concession if foreigners take advantage of [it]." If it is used to increase a U. S. tariff, foreign producers understandably charge bad faith; if an application is denied, the "injured domestic producer finds it of no aid, and in fact only a means of prolonging his tortured end." Says Mr. Wilkinson, "This scarcely seems to be the way to 'win friends' at home or abroad."

No-Stretch Socks. The Bureau of Weights and Measures of New York City has sent a sharply worded warning to hosiery manufacturers and retailers concerning the

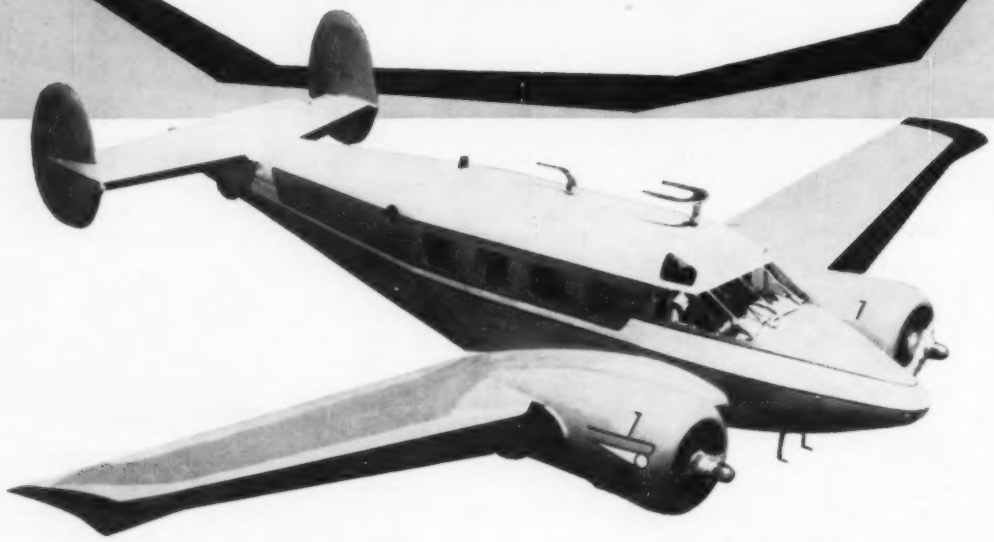
sale of stretch socks which won't stretch. The Bureau's investigations indicated that many socks being offered as fitting all sizes were so shoddily made that there was no adequate stretch and that customers — especially those needing the larger foot sizes — were being cheated.

Training Menders. English wool mills have been experimenting with a new method for training burlers and menders, called the "Belbin" system. By this method, the girls are shown (without any preliminary discussion or teaching) exactly how a weave is made up, and how to identify defects quickly and accurately. Examples of common defects are shown to them repeatedly, until they are completely familiar. Advantages over conventional training methods were found to be: steady progress by all trainees, trainees have closely similar abilities after training, greater ability of those trained to mend fancy weaves, better speed

have your KEY personnel

at the RIGHT place

at the RIGHT time



when you need them
and
where you need them in...

Beechcraft
industrial airplanes

For descriptive brochure write or phone

Southern Airways Company

ATLANTA, GEORGIA, TEL. POPLAR 7-8918

Charlotte, N. C., Tel. FRranklin 6-7150 Birmingham, Ala., Tel. 4-0502

Beechcraft airfleet of the textile industry

and quality, and trainees' progress can be definitely measured.

Fabric Production Mostly Down. Cotton broad woven fabric production in the second quarter of 1956 was 2.6 billion linear yards, 5 per cent below first quarter 1956 output, but 6 per cent higher than the second quarter of 1955, reports the Bureau of the Census. Production of broad woven goods of man-made fibers and silk was 564 million linear yards in the second quarter of 1956, down 11 per cent from first quarter production, and about the same percentage below the output for the similar period of last year.

Ala. Spotlights Distaff Side. Women leaders from each textile community in Alabama were special guests at the annual public

relations meeting of the Alabama Cotton Manufacturers Association, held recently in connection with the Alabama State Fair.

Wool Must Be Washable. Regulations recently announced by the Union of South Africa government

News in Brief

make it illegal to use in branding sheep any fluid or other material (including tar and paint) which can not be eliminated in any washing process.

Fungi - Resistant Cotton. Air Force research shows that 8-oz or lighter cotton fabrics acetylated to 12.6%, ±0.4%, have "adequate" resistance to fungi, but retain desirable physical properties. Preliminary tests show that 3.6-oz cotton fabric cyanoethylated to 3.6%

A SALE IS FINAL WHEN THE CUSTOMER RETURNS—LYMAN

With employment and income at an all-time high, the major problem facing the textile industry today is to get a far greater share of consumer disposable income. A one-pound increase in per capita consumption of textile fibers creates a market for an additional 165 million pounds of fibers. If at the same time that per capita consumption is increased, consumers are made quality conscious, there will be a "trading up" in the value of each pound of yarn and each yard of fabric, with increased satisfaction on the part of consumers and increased profit margins for the mills.

Research has keynoted the growth of other industries as they have reached for an increasing share of consumer disposable income. There is every reason to believe that we, too, as an industry can achieve the goals of increased consumption of better quality fabrics through applied research.

With the development of the many new synthetic fibers by the major chemical companies, the first step of technical fiber achievement has been accomplished. And fortunately for us, the fiber producers are making the consumer increasingly aware of their fiber achievements. It is up to us, the intermediaries between fiber producer and retailer, to exploit the advantages offered by the many new synthetics in order to awaken consumer demand for quality textiles — textiles designed to incor-

Fitchburg Yarn's Lyman

porate all of the fiber characteristics desired by consumers.

Heretofore we have thought more in terms of ease of production by our mill customers rather than in terms of the finished product. Today, we are increasingly aware of the importance of both. We have to turn out yarn which runs well for our mill customers and which has the characteristics needed to please the consumer.

A pound of yarn should not be considered sold when it is in our customer's mill, should not be considered sold when it is in a product on the retailer's shelf; no, not even when the cash register has rung and the consumer has walked out of the store. That product is not sold until the consumer wears it, is pleased with it, and wants another. That is what creates business for our customers and in turn for us.

When the housewife tells her husband that the new socks he just bought are easy to wash, hold their shape and don't fade, and he remarks that he has had several compliments on the blends of colors, our spindles will continue to hum.

We are in partnership with our mill customers in helping them create demand for their products. The styling burden rests with them, but the functional characteristics are dependent on the yarn.

Today we are pioneering in the development of synthetic and natural blends to satisfy textile wants which have not yet been created because the consumer does not even think in terms of the capabilities of our fibers. Ten years ago the consumer did not think in terms of television because he did not know that such electronic developments were a reality and could give him the pleasures and satisfactions enjoyed by the millions of television owners today.

As we pioneer with our mill customers in developing yarns through functional research which will better serve the consumer, new wants will be created, per capita consumption of fibers will increase, and the quality of textiles as well as the stature of the industry will be traded-up.—*Frank W. Lyman, president and treasurer of Fitchburg Yarn Co., in an address to sales representatives of the mill.*

Kendall Mills, Finishing Division of Kendall Co., Bethune, S. C.

A new cotton finishing plant, finishing the cloth produced by The Kendall Cotton Mills Division, which operates seven plants in North and South Carolina. It has approximately 300,000 sq. ft. of manufacturing and storage space.

DANIEL CONSTRUCTION CO. BUILDERS

LOCKWOOD GREENE PROJECTS IN . . . . .

TEXTILE FINISHING

Lockwood Greene has completed projects in the Textile Industry valued at over three-quarter billion dollars and offers highly specialized engineering services in all phases of Textile Manufacturing including Textile Finishing.

Bishopville Finishing Company, Bishopville, South Carolina
(Division of Reeves Brothers Company)

New rayon finishing plant to handle the product of Reeves Brothers Company Mills in the South.

BOSTON 16, MASS. 316 Stuart Street
NEW YORK 17, N. Y. 41 East 42nd Street
SPARTANBURG, S. C. Montgomery Building

OVER A CENTURY OF INDUSTRIAL PLANT EXPERIENCE
BROCHURE AVAILABLE UPON REQUEST

Continuous management services from site selection to plant completion.

LOCKWOOD GREENE
ARCHITECTS — ENGINEERS

nitrogen content shows satisfactory fungus resistance. Details are available in a 26-page report, "Investigation of Selected Chemically Altered Cotton Materials," PB 121215, available from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., for 75 cents.

What's Your Leg Volume? Burlington Hosiery Co. is determined to do something about the American woman's practice of buying hosiery by foot size only, without regard to wide variation in "leg volume." The company has meas-

ured the volume of a number of women's legs, by having them put their foot in a tank of water, and measuring the volume of water displaced (average volume: 395 cubic inches). Next problem: How do you get women to measure their leg volume before buying hosiery?

Move to Boost Ga. Tech Textile School Enrollment. A. French Textile School's Director Herman A. Dickert reported at the recent annual meeting of the Textile Education Foundation, Inc., that while the total student enrollment at the Georgia Institute of Technology is 5.3 per cent more this year than last, the

number pursuing textile courses is 9.7 per cent less. "We should have at least 10 per cent of the 5,424 students, or 540; but, instead, only 204 are majoring in textiles," Mr. Dickert said. A student enrollment committee will be appointed to study the possibility of increasing enrollment at the school, retiring Foundation president Arthur B. Edge, Jr., told those attending the business session. Also, a committee has been appointed to study the school's curricula. "It is to recommend such changes as will assure continued accreditation and help the school more nearly serve the purpose of providing a larger and better trained supply of graduate textile engineers," the Callaway Mills Co. head said. The Foundation, established by Georgia's textile industry during World War II to assist the textile school at Ga. Tech, regularly supplements state funds allocated to it, and all of its income and efforts are directed toward the school.

Cotton Fiber Tests. "Cotton Fiber and Spinning Tests" is the new name for the second edition of the National Cotton Council's well-known "Use and Application of Fiber and Spinning Tests." The 51-page book is almost completely rewritten, and is divided into four major parts — Meet the Cotton Fiber, Measuring Fiber Properties, Applying Data from Fiber Tests, and Present and Future of Cotton

News in Brief

MERCHANDISING NOTES

Calico Printers' Association Ltd., Manchester, England, has introduced wash 'n' wear cotton fabrics for men's suits and shirts, called "Cepea Helikon" and "Cepea 56," respectively. * * * Another wash 'n' wear cotton shirt, made by Rael-Brook of London from a fabric called "Toplin" (top of the poplins) is to be introduced in the U. S. about the first of the year.

Canvas Awning Institute and the National Cotton Council will sponsor a series of commercials on Dave Garroway's NBC-TV show, "Today," from April to June of next year, telling the advantages and economy of canvas awnings.

Chicopee Mills' Lumite Division has introduced a furniture upholstery fabric, "Chic-Spun," of saran, combined in some cases with metallic yarns, linen, nylon, or rayon.

Hecht Co., Washington, D. C., department store, sponsored a store-wide "Wool Fair" in October, in cooperation with the U. S. Department of Agriculture and the Wool Bureau.

Burlington Hosiery Co. has retained the services of Ian Douglas Campbell, 11th Duke of Argyll, to promote its line of Argyll socks. Burlington expresses the hope that the Duke will become as familiar to wearers of argyle socks as the man with the eye patch is to wearers of Hathaway shirts and as Commander Whitehead is to drinkers of Schweppe's soda water.

A Japanese organization, Japan External Trade Recovery Organization, reports that a market survey conducted in the United States indicates that the national origin of products is not a factor in their sale or distribution.

A. & M. Karagheusian, Inc., has issued a newly revised edition of "So You're Going to Buy a Carpet," which is intended to give essential information to the homemaker who is shopping for one.

Shamban Engineering Co. is offering Teflon-coated glass fabrics; suggested uses include conveyor belts, covers for heat sealing bars on packaging equipment, reusable separator release sheets in laminating, and covers for can or drum dryers.

Shamrock Knitting Mills are marketing "Ivy League" boys' and girls' socks with a belted back. A buckle is centered on the back of the ribbed ankle cuff.

Swedish retailers and textile mills have cooperated to form a credit organization, Textilkredit, to supply credit to well-established firms which are short of liquid funds and which are having trouble obtaining credit from banks, because of competition from Japan and East European nations.

Wool Bureau reports a definite trend away from woolens in favor of worsteds in men's and boys' wear.

"Fresh from the mill!"

These H & D corrugated shippers double as storage-dispensing bins... keep yarns clean and orderly during and after shipment. Ask H & D to help improve your packaging, too.

HINDE & DAUCH

Subsidiary of West Virginia Pulp and Paper Company

AUTHORITY ON PACKAGING • SANDUSKY, OHIO
13 FACTORIES • 42 SALES OFFICES

Fiber Testing. Copies are available from the Council at P. O. Box 9905, Memphis 12, Tenn.

Canada a Good Customer. A digest of the findings of a survey of U. S. exports to Canada — 22% of our $15.5 billion exports in 1955 — has been published by the U. S. Chamber of Commerce. Interesting facts: Since the war, the U. S. has sold $5.5 billion more to Canada than we have bought from her; the southeastern states (Ala., Ga., Tenn., and the Carolinas) sold $55.2 million worth of goods (principally textiles) to Canada in 1954; Brooklyn sells more to Canada than does Argentina; small businesses have a correspondingly larger share of the exports going

to Canada than big business. Copies of the digest, "Our Trade With Canada," based on a survey conducted by Battelle Memorial Institute for the Canadian Institute of International Affairs, are available from the Chamber, Washington 6, D. C.

Peru Ups Wool Tariff. Recent increases in the duties on wool goods imported into Peru amount to a virtual embargo on these materials, according to reports in the trade.

Moire Patent Valid. The U. S. Court of Appeals for the Third District has ruled that U. S. Patent 2,448,145 for producing moire by the "H Process," owned by Newburgh Moire Co., is valid. The Court held, however, that U. S. Patent 2,513,646 is essentially the

TEXTILE FIRMS CAN DIVERSIFY—LOVE

While recognizing the risk aspects of diversification generally, and for the textile industry particularly, I am of the opinion that it is not only a possible course of action for some firms to take but also a desirable one.

The Federal Trade Commission reports 1,773 mergers and acquisitions between 1948 and 1954, in mining and manufacturing firms alone. The "urge to merge" is certainly a common facet of business thinking today. The principal underlying motive for undertaking diversification has been to foster company growth. Diversification has been successfully employed to offset declining or vanishing markets, to offset declining profit margins or an unfavorable geographic location brought about by changing economic factors.

Successful application of diversification to business problem solving is typically seen when growth products are selected which are closely allied with major company strengths and long term company policy. A textile firm having defined its problem and considering non-textile diversification should audit the strengths or resources that it can bring to bear on a diversified operation.

In making an audit, many firms will find resources which can be successfully and constructively applied to non-textile activities. Textile manufacturers have a general understanding of manufacturing processes which put raw material

Love of Arthur D. Little, Inc.

in at one end and take finished goods out at the other. Cost systems, materials handling, labor relations, plant layouts, warehousing, and inventory control are just a few of the areas of production which might carry over to many non-textile activities that might be considered.

A former textile finishing plant superintendent, now the production manager of a metal working firm, found he knew a lot about metal production, but had to overcome the obstacle of a new language. He found processes the same, but called by different names.

Financial experience can be applied in new ventures. Sound accounting practices, developed by many textile firms in the face of a strong price competition, can be implemented in cost-control systems to insure maximum efficiency in the new operation. Many firms have developed cost-cutting procedures through improved materials handling methods. Economical production flow schemes may well be applied to other fields.

Through established credit lines, textile firms may be able to supply financial requirements of promising firms which, by virtue of their rapid expansion, are under-financed and unable to get the working capital needed to meet market opportunities.

Losses sustained in recent textile activities may be turned to advantages through diversification, which some firms realized in 1953 and 1954. For federal income tax purposes, these losses can be used as a deduction from future income if they have not been applied against past income. Use of these deductions means that profits from the diversification program are tax-free to the extent of the losses. The greater the anticipated profits from possible diversification, the greater the weight which can be given these losses. — *Robert T. Love of Arthur D. Little, Inc., in an address to the Controllers Institute of America.*

620

This number identifies a distinguished addition to low cost finishing chemicals, the cyclic urea resin by Wica

The development of a new manufacturing concept has broken the cost barrier of cyclic urea-formaldehyde resin with Wica Resin 620 at absolutely no sacrifice in desirable chemical characteristics.

Dimensional stability, wrinkle recovery, hand control, transformation of fabric texture, and minimum effect on light fastness are absolutes in Wica Resin 620. Constant minimizing of chlorine retention is important to all reputable chemical houses, and particularly at Wica.

Wica Resin 620 is unique in the whole field of cyclic urea-formaldehyde because it falls in the low-cost category and fulfills the maximum requirements for resin finishing.

Finishers until now limited to paste resins can open new markets—successfully competing in the active market with fine modern finishes.

The price of Wica Resin 620 makes this most desirable of finishes available to a wider range of fabrics than ever before. The famous Wica name guarantees you all the qualities you desire in cyclic urea-formaldehyde resins—and at an unbelievable new, low cost.*

***Please address inquiries to Division CU-620**

Wica

SPECTRUM ACCURACY

WICA CHEMICALS, INCORPORATED, OLD CONCORD ROAD • CHARLOTTE, NORTH CAROLINA
synthetic organic chemicals • textile specialties • latices • adhesives

ESTIMATED NUMBER OF COTTON LOOMS IN PLACE JANUARY 31, 1956

Continent	Ordinary	Automatic	Automatic Attachments	Total
Europe	1,133,836	319,272	64,839	1,517,947
North America	27,606*	394,374	—	421,980
South America	92,338	57,605	11,433	161,376
Asia and Oceania	610,853	128,808	3,762	743,423
Africa	16,481	8,947	148	25,576
TOTALS	1,881,114	909,006	80,182	2,870,302

*Number of ordinary looms in U.S.A. not available
Source: International Cotton Federation

same as the first, and is invalid.

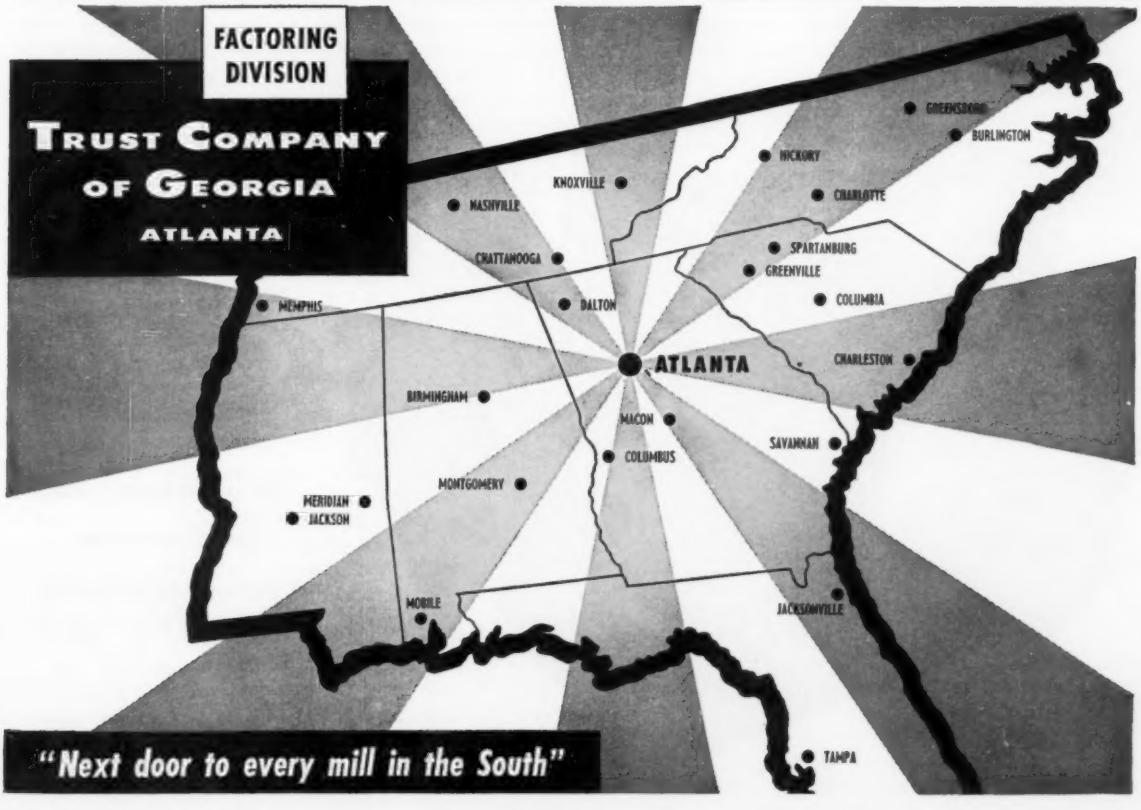
Machinery Shipments Down. The Bureau of the Census, quoting preliminary figures from the 1954 Census of Manufactures, reports that textile machinery manufacturers shipped products valued at $337 million in 1954, a decrease of 17 per cent since the last such census in 1947. During the same period, employment in the industry dropped 31 per cent.

World Cotton Loom Statistics. A survey by the International Cotton Federation shows that there were 2,870,302 cotton looms in place in the world on January 31, 1956, a decrease of 19,127 since the same date a year ago [see TEXTILE INDUSTRIES for March, 1956, p. 90]. Europe and North America showed decreases of 66,352 and 7,347, respectively; South America and Africa showed small increases, but Asia showed an increase of 46,624 looms — about 75% of which was accounted for by Japan, with an increase of 32,479 looms in place. For details, see table above.

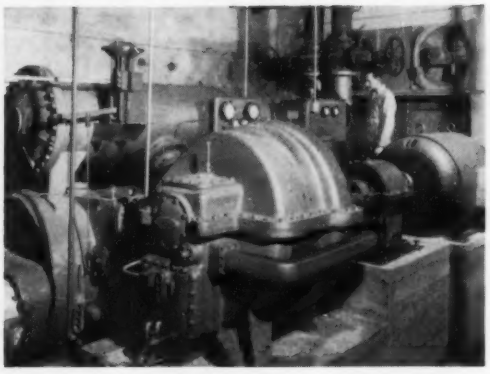
NAWM Clarifies Labeling Position. In the November issue of

News in Brief

TEXTILE INDUSTRIES, p. 61, it was stated that the National Association of Wool Manufacturers had departed from its previous position on labeling, in aligning itself with the National Retail Drygoods Association in a call for a uniform labeling act, and repeal of the Wool Products Labeling Act of 1939. A spokesman for NAWM says that the position of the Association remains unchanged: "Such requirements as may relate to fiber identification in consumer textiles should be the same for all textiles regardless of fiber content." He further states, ". . . within this framework there is no attempt to prescribe what the requirements should be. This question should be hammered out in our normal democratic procedure with the consumer interest, rather than a specific fiber interest, being paramount. . ."



HARTSVILLE COTTON MILL REFRIGERATES WITH A CARRIER CENTRIFUGAL



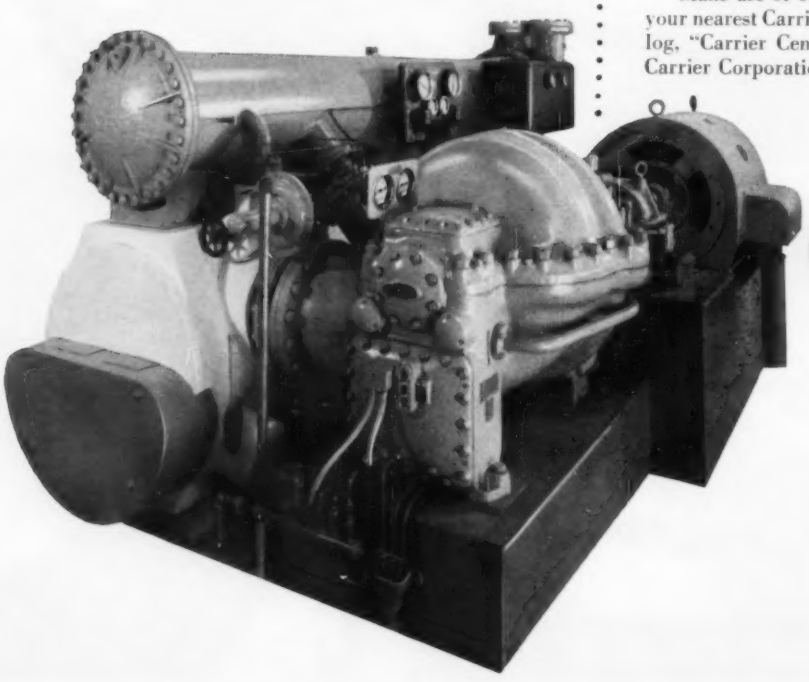
The most recent step in improving the control of temperature and humidity at the Hartsville Cotton Mill, Hartsville, South Carolina, is the addition of a new 560-ton Carrier Centrifugal Refrigerating Machine. Carrier has played an important part in the progress of this mill, which has also installed ten Carrier evaporative cooling systems and a 172-ton Carrier Reciprocating Refrigerating Machine.

Carrier Centrifugals serve dependably—often around the clock—in many mills, including Amerotron, Deering Milliken, Stonecutter, Greenwood.

Carrier developed the first centrifugal refrigerating machine in 1922. Carrier has built more of them—by far—than all other makers combined.

For unbeatable performance, why not insist on Carrier Centrifugal refrigeration for your mill? It can serve dependably as the heart of any air conditioning system. Carrier Centrifugals are available in many sizes, from 100 to 4000 tons cooling capacity.

Make use of our experience and assistance. Call your nearest Carrier office. Or write for our free catalog, "Carrier Centrifugal Refrigerating Machines." Carrier Corporation, Syracuse, New York.



Carrier

air conditioning

refrigeration

industrial heating

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Of fiber battles, textile publicity, and the guanaco

SEVERAL YEARS ago at a meeting of one of our larger associations which serves the interests of the textile industry, a man high in national office appeared to make a speech. The auditorium was filled; the crowd leaned forward in their seats to hear what this great man was to say — and for about ten minutes he read a carefully prepared manuscript which said exactly nothing.

Before the disappointed audience could politely applaud and file out, the speaker said, "You people know why I had to do that. If you now want the facts, and if the press will not report what I have to say, I'll give them to you."

He then extemporaneously told that American audience what it needed to know about this country's position in a world of turmoil, which way it was headed, why certain policies were adhered to that the public could not gather from newspaper reports, and gave his forecast for events to come and how the administration intended to handle them.

The prepared manuscript was a dud; his facts of life talk went to the hearts of the people; they appreciated being told the truth; and they appreciated his presentation of the facts without any criticism of other people or other political parties.

By the same token, it is about time for the textile industry to throw away its prepared manuscript and get down to the facts of life.

The textile mills of this country support a number of textile associations. Most mills belong to more than one association, and many of the mills belong to associations which think that they have diverse interests.

For instance, instead of promoting textiles as textiles, and instead of pointing out the good qualities of a fiber, some fiber groups have become so bent on knocking the other fibers that they actually have forgot what their own good qualities are. One of the basic principles of selling is to point out the good qualities of your own product, and never mention the competition. Mention of the competitive product only creates doubt in the minds of the purchaser.

NO GOOD can come to the textile industry by creating so much doubt about various fibers that the public doubts them all.

Then too, the mill that processes one natural fiber may also process another natural fiber or make blends which contain synthetics. The mill which today runs on one fiber may tomorrow run on several.

Take, for example, a mill which for years operated only on cotton. It supported the conventional textile associations and also those devoted to the interests of cotton. But times changed and the mill did an excellent styling job by blending cotton with a synthetic fiber. The mill was not tied to cotton and it was not tied to synthetics, but it was supporting interests that promoted cotton.

Shortly, the fibers found themselves in a knock-down drag-out promotion battle which was not designed to sell more of each fiber, but was designed to hurt the other fiber. The mill found itself in the peculiar position of paying dues to the very association which was broadcasting detrimental information about the product which the mill was manufacturing.

Since the mill executives saw no need to pay dues to different groups which were battling among themselves, each of which could injure the market position of the mill, the executives decided that they would support neither side.

THE TEXTILE industry by this time should know the basic principles of merchandising, and the various fiber interests should know the basic principles of merchandising, and each should know that these basic principles do not include a campaign which is designed to confuse the public or to make detrimental statements about any fiber.

Let's sell our own textile products in a clean and competitive campaign; let's have a little more unity in the textile industry; and above all, let's sell more of all kinds of textiles instead of trying to sell less of each kind.

Publicity and guanaco

The textile industry rarely receives favorable front-page publicity in the daily press, at least outside the textile areas. When our representatives go to Washington to plead our case before the committees, subcommittees, and other assemblages which hold the power to ruin our industry by concessions granted to needy foreigners, our usual press notice comes through an editorial chiding us for squirm-

*Our bank has approved Comer's plan . . .

Comer's reputation for careful, accurate analysis of textile equipment and properties results from a thorough understanding of present day market trends . . . backed by 24 years serving the textile industry. Whether you are buying or selling . . . Comer's daily handling of textile machinery and mill transactions keeps them abreast of today's market. It's this kind of expert appraisal and thorough handling of transactions that makes sense to bankers, to buyers, to those who sell! Put Comer's broad knowledge and experience to work for you.

Sales ★ Purchases ★ Liquidations ★ Mergers ★ Fair Appraisals ★ For immediate action . . . contact

*Excerpts from records of actual transactions handled by Comer.

COMER

Machinery Company

680 West Peachtree St., Atlanta 8, Georgia • TRinity 5-5682
5236 Wilkerson Boulevard, Charlotte, N. C. • EXpress 9-5606

ing at the touch of the sacrificial knife, and/or a few paragraphs buried on page 29 (next to an ad for vacuum cleaners at $7.98).

But let a few textile plants run afoul of the Federal Trade Commission and we get the works — front page, black headline, black eye for the industry. Which brings us to the point — the relationship between the Wool Products Labeling Act, determining the percentages of fibers in a blend, and an unusual beast called the guanaco. These have been the subjects of some recent unfavorable publicity for the textile industry — on the front page.

PROBABLY the average person has never heard of the guanaco, and wouldn't know a guanaco if it barked at him (or did whatever guanacos do when they're stirred up). When it first popped up in a front-page story from Washington, there was a faint stirring of memory from textile school days, a quick dash for the dictionary, and we had it:

> *guanaco* — A South American mammal (*Lama guanicoe*) related to the llama but larger and more graceful.

Evidently the guanaco produces a fiber which is highly prized; witness the complaint by the FTC against certain woolen mills for the alleged false labeling of fabrics containing guanaco. One such label reads, "Precious wools — guanaco — a blend of 80 per cent wool and 20 per cent guanaco." Another says, "70 per cent guanaco — 30 per cent wool."

This is the first time in this author's experience and memory that fibers have been classified in the same category as rare gems. However, if memory serves us correctly, wool was rare and highly costly during a long period in the 40's. Australian wool during that particular era hit an all-time high, and manufacturers of all-wool products and blends dropped the high priced wool as too costly to insure even a minimum profit. Blend manufacturers shifted to blended fabrics with lower priced fibers. Rare and costly then perhaps, but hardly precious.

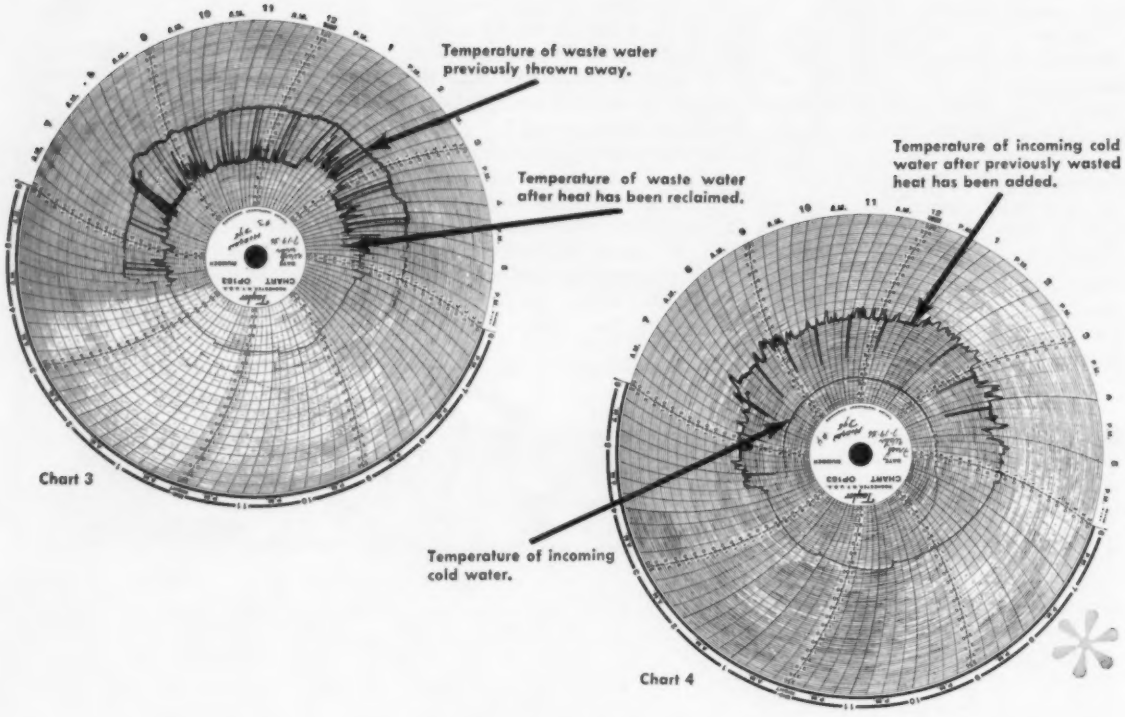
We have little patience with misleading advertising of any type. The "special ingredient" ad — the "magic formula" spread — that explains nothing yet claims everything, is an insult to the collective intelligence of our populace. It is well to remember that this type of advertising is designed to do *your* thinking for *you*.

But we must defend, up to a certain point, the manufacturers of blend products who must, under the law, label the exact percentages of blends in their products. Their problem is difficult, especially if there is no flexibility in the law. We wonder if the Wool Products Labeling Act takes full cognizance of the fact that blends do and can vary in the finished cloth—though the lay-down of the blends in the opening or picking room is as perfect as human ingenuity, skill, and machinery can possibly make it.

That poses a speculative question and perhaps a controversial one. If the lay-down of the blends

(Continued on page 147)

Date		Event	Location
Dec.	1	Northern New England Section AATCC annual meeting	Hotel Vendome Boston, Mass.
	1	South Central Section AATCC	Hotel Patten Chattanooga, Tenn.
	6	Rhode Island Section AATCC annual meeting	Johnson's Hummocks Grille Providence, R. I.
	7	Philadelphia Section AATCC	Kugler's Restaurant Philadelphia, Pa.
	7	Niagara Frontier Section AATCC	Buffalo, N. Y.
	8	Southeastern Section AATCC	Dinkler Plaza Hotel Atlanta, Ga.
1957			
Jan.	23	New York Section AATCC luncheon-symposium	Hotel Delmonico New York City
	28-29	National Cotton Council annual meeting	St. Louis, Mo.
	28-31	Plant Maintenance & Engineering Show	Public Auditorium Cleveland, Ohio
Feb.	16	Mid-West Section AATCC	Hotel Bismarck Chicago, Ill.
	25-27	Textile Quality Control Conference	Georgia Tech Atlanta, Ga.
	27-28	Cotton Research Clinic, sponsored by National Cotton Council	Gen. Oglethorpe Savannah, Ga.
Mar.	14	Southern Textile Methods and Standards Association	Clemson House Clemson, S. C.
	28-29	Textile Quality Control Association	Clemson House Clemson, S. C.
Apr.	4-6	American Cotton Manufacturers Institute annual meeting	Biltmore Hotel Palm Beach, Fla.
	10-12	Alabama Cotton Manufacturers Association annual convention	Buena Vista Biloxi, Miss.
	23-24	National Knitted Outerwear Association annual meeting	Waldorf-Astoria New York City
	25-27	Phi Psi Textile Fraternity annual meeting	New Bedford Hotel New Bedford, Mass.
	29	Underwear Institute annual meeting	Traymore Hotel Atlantic City, N. J.
29-May	3	Knitting Arts Exhibition	Auditorium Atlantic City, N. J.
May	1-2	Fiber Society spring meeting	Clemson House Clemson, S. C.
	1-4	Cotton Manufacturers Association of Georgia annual convention	Emerald Beach Hotel Nassau, Bahamas
Sept.	26-27	Combed Yarn Spinners Association annual meeting	The Cloister Sea Island, Ga.
Oct.	2-3	Chemical Finishing Conference	Hotel Statler Washington, D. C.
Nov.	14-16	AATCC National Convention	Hotel Statler Boston, Mass.


Temperature of waste water previously thrown away.
Temperature of waste water after heat has been reclaimed.
Temperature of incoming cold water after previously wasted heat has been added.
Temperature of incoming cold water.
Chart 3
Chart 4

How a **BREADY SYSTEM** of heat recovery solved the boiler overload problem of Morgan Dyeing and Bleaching Company and gave them **STEAM TO SPARE**

Reported boiler peak loads of 50,000 lbs. are down to 26,000 lbs., fuel consumption has been sharply reduced, dye kettle fill time of 25 to 35 minutes is now 5 to 6 minutes, production time has been substantially reduced, with a reserve supply of hot water.

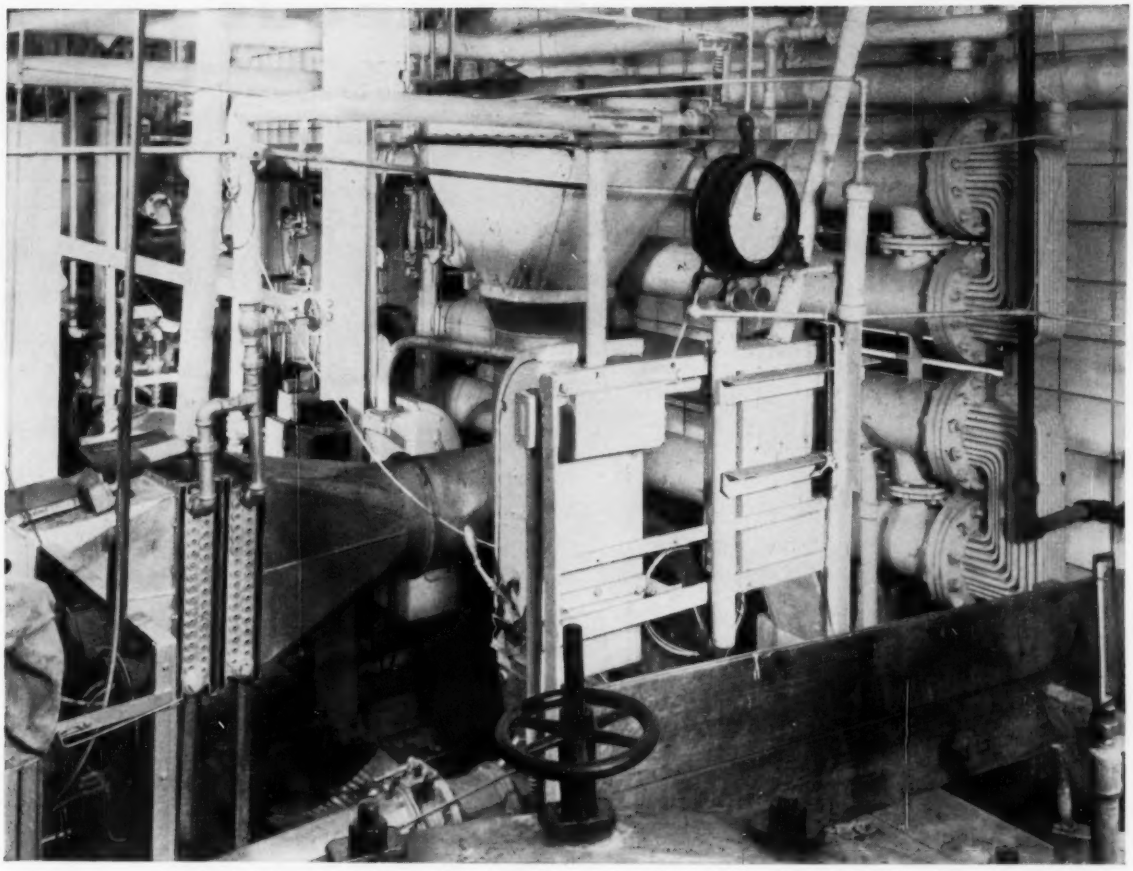
Boiler peak loads of the Morgan Dyeing and Bleaching Company, Rochelle, Illinois, last winter, were seriously in excess of boiler capacity. Purchase of hot water that a neighboring mill could furnish without seriously affecting their own production, only partially helped to relieve this situation. There was need for action, and Francis J. Connolly, purchasing agent, contacted Ludell to see what could be done.

Ludell engineers studied the problem. They surveyed the company's entire hot water heating system and determined the Bready System of Heat Recovery that would meet the plant's requirements.

The actual *Temperature Charts* from the Bready System of Heat Recovery, at Morgan, (see top of page) show the incoming 55°F water heated to an average temperature of 120°F, the desired hot water starting temperature, utilizing the waste heat from process effluent having an average temperature of 130-135°F. The momentary dips in the No. 4 chart show the system *automatically* cleaning itself. The only steam required for process water is that which is used for boil-off operation.

Today, Morgan Dyeing and Bleaching Company at Rochelle, Illinois, has all the steam needed for its present production. It now has boiler capacity to sell steam to the neighboring mill. Based on boiler load figures, a reduction of fuel costs of 41% is indicated. Equally important is the fact that the Bready System of Heat Recovery made the purchase of an additional boiler, fuel required for the boiler and building to house it, unnecessary.

Formerly, Morgan Dyeing and Bleaching Company took 25 to 35 minutes to fill and heat water in dye kettles before



The Bready System of Heat Recovery of the Morgan Dyeing and Bleaching Company was installed next to a wall of the plant and occupies only a few square feet of previously unused floor area. The continuous U-shaped tube bundles connecting the reclaimer shells, which identify the Bready Systeh and are a means of achieving its guaranteed non-clogging feature, are at the right. Because other plant equipment has since been installed, the control panel and self-cleaning segments of the system are obscured from view.

actual processing operation could start. With the Bready System, the dye kettles are filled in about 5 minutes with water at desired temperature so that process can begin immediately. With a 20 minute reduction per fill multiplied by the number of fills and vats, a tremendous overall decrease in actual operating time was realized. The system will pay off in 25 months.

The boiler overload problem of Morgan Dyeing and Bleaching Company is not without its counterpart in many other wet processing plants. Boiler peak load reductions, production increases, fuel reductions and other economies can be effected in these plants with a Bready System of Heat Recovery as they were accomplished at Morgan.

Bready Systems of Heat Recovery are as important as an integral part of new plant hot water heating systems as they are in solving existing plant hot water heating problems. It will pay you to investigate all the benefits of a Bready System of Heat Recovery as it specifically applies to your present plant, or any new plant installation. Write, wire or phone Ludell today for detailed information, or a free plant survey.

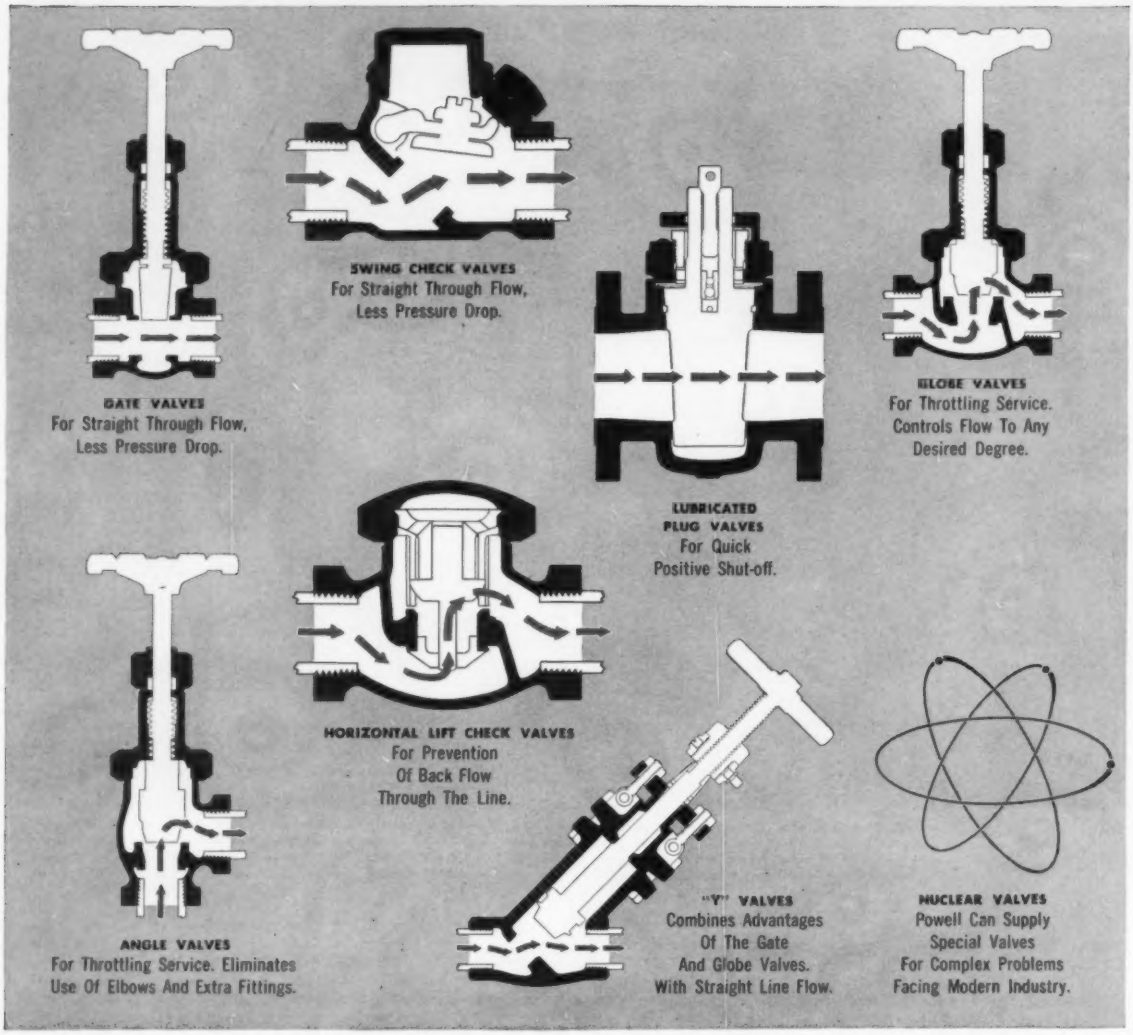
Ludell *Manufacturing Company*

DEPT. TI

5200 WEST STATE STREET • MILWAUKEE 8, WISCONSIN

MANUFACTURERS OF BREADY SYSTEMS OF HEAT RECOVERY, BREADY SYSTEMS OF HOT WATER HEATING AND WHEELER SELF-UNLOADING WASHER

POWELL
for all valve needs



for every flow control problem there is a right Valve

Powell can supply this right valve—*made right* of the right material*. Every part of every valve must pass rigid inspection. And as a final step in manufacture, every Powell Valve has *Performance Verified* through an *actual line test.*

As an aid in selecting the right valve, the basic valve designs are illustrated here. For complete information on the wide range of sizes and materials available in each type of the basic valves illustrated above, consult your Powell Valve distributor. If none is located near you—or if you have a special flow control problem—write direct to The Wm. Powell Company, Cincinnati 22, Ohio.

PERFORMANCE
PV
VERIFIED

The Wm. Powell Company, Cincinnati 22, Ohio . . . 110th YEAR

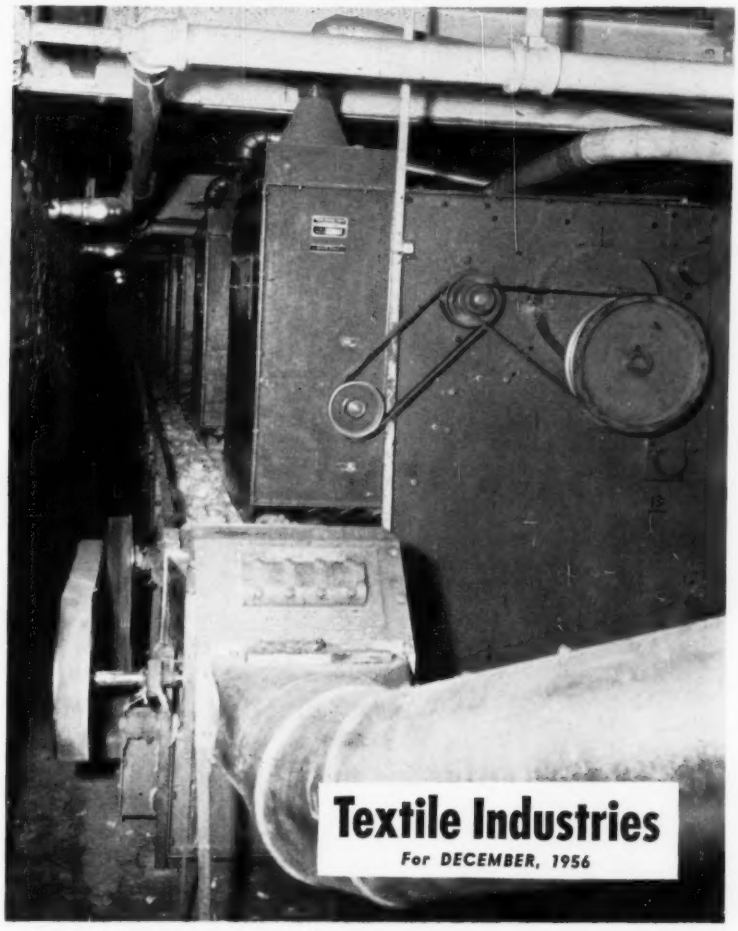
POWELL VALVES

*BRONZE, IRON, STEEL AND CORROSION RESISTANT VALVES.

Improved opening and cleaning

More pepper trash and less spinnable fiber removed at Woodside Mills

Axi-Feed changeover included modifying the doffer for the upright apron from leather to spikes, plus addition of two grid sections and another lag-type beater.



Staff prepared Exclusive

WOODSIDE Mills, Greenville, S. C., formerly had 14 blending feeders, two vertical openers, four fan sections, and four lattice openers. These were arranged in two lines, one line containing eight blending hoppers, one vertical opener, and two lattice openers which followed two fan sections. The other opening line contained the same lineup, except that only six hoppers were used.

An improvement program in the opening department brought the following changes: The blending feeders were modified by adding Axi-Feed* changeover. This changeover included modifying the doffer for the upright apron from leather to spikes, and addition of two grid sections and another lag-type beater. A suitable replacement housing was fixed onto the hoppers for this equipment.

The vertical openers were replaced by Axi-Flo* openers.

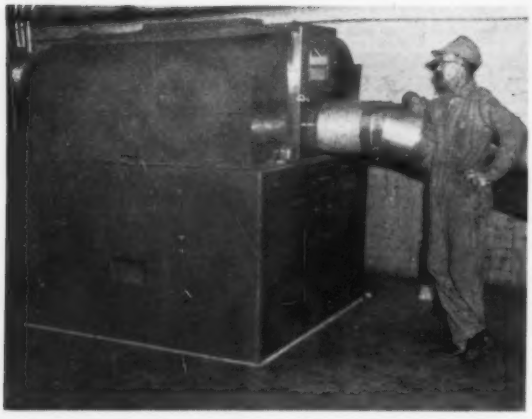
TESTS on a 12,500-lb lot of mixed irrigated and rain-grown cotton (averaging SLM bright) showed that 30% more droppings were evident at the Axi-Flo than were taken out by the equipment these units replaced. The droppings contain more pepper trash and noticeably less spinnable fiber than the old units removed.

A major advantage of the Axi-Flo noted in this mill is that the cotton is more thoroughly "bloomed" and opened, thereby permitting more satisfactory use of compressed cotton. The stock is now opened much better than it was before the old equipment was replaced.

The 30% additional droppings at the Axi-Flo have had no apparent effect on the amount of waste out at pickers and cards. This fact is attributed to the more open condition of the stock, thereby making it easier for more waste removal at subsequent processes.

The objective in putting in the new equipment was to improve over-all quality. Other advantages expected to accrue from this installation have not been verified

*See TEXTILE INDUSTRIES for Oct., 1954, pp. 113, 115, and 117.



Axi-Flo openers replaced vertical openers and proved to impart more "bloom" in opening the cotton. Better opening permits more satisfactory use of compressed cotton.

Thirty per cent more droppings were evident at the Axi-Flo than were taken out by the equipment replaced. The droppings contain more pepper trash and less spinnable fiber.

Fifty bales are opened for feeding from the opener room floor; these last about eight hours.

Ninety bales are arranged for feeding from upper floor level. This supply lasts about 18 hours.

yet, since the equipment has been in operation only about six months at this writing.

The mix is fed to the hoppers from overhead as well as from the opener room floor. 50 bales are opened for feeding from the opener room floor. This layout lasts approximately eight hours, and is exhausted before feeding is started upstairs. 90 bales are arranged for feeding from the upper floor level, and this lasts about 18 hours.

Axi-Feed and Axi-Flo are made by Whitin Machine Works.

Task group to study cotton utilization

■ APPOINTMENT of a seven-member cotton task group to advise the presidentially appointed bipartisan Commission on Increased Industrial Uses of Agricultural Products concerning possibilities for wider utilization of the nation's cotton crop has been announced. Members are:

M. Earl Heard of West Point Mfg. Co. (chairman); Wm. Rhea Blake of the National Cotton Council; Dr. C. H. Fisher of Southern Utilization Research Branch, Agricultural Research Service, U.S.D.A.; Otto Goedecke of Otto Goedecke, Inc.; J. Russell Kennedy of Calcot, Ltd.; Dr. H. F. Mark of Polytechnic Institute of Brooklyn; and Walter Regnery of Joanna Cotton Mills Co.

Commission Chairman Welsh explained that the job of the task group would be to review the present technical and economic position of cotton, determine the crop's present and potential uses as indicated by current and proposed research, and estimate the amount of cotton that could be made available for new or expanded uses with full agricultural production and potential increases in farming efficiency.

On the basis of these studies, the group is to submit an advisory report for consideration by the commission in making its recommendations to Congress.

Sizing materials quickly evaluated

Avisco weaves ribbons to screen sizing materials and formulas

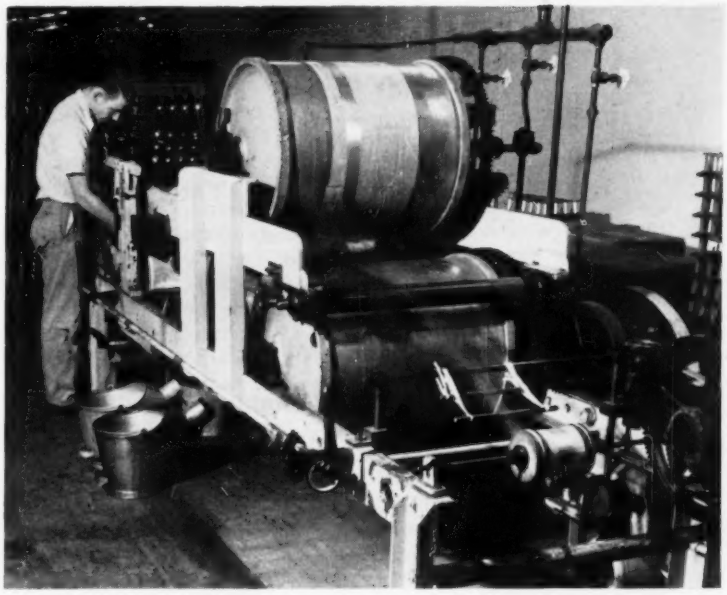
by J. A. Roberts and
E. K. McCall
Textile Research
Department
American Viscose Corp.
Exclusive

IN ANY organization concerned with the development and evaluation of warp sizing materials, one of the primary requirements is a relatively fast, economical, and practical method for determining the merits of various sizing materials.

After being confronted with the problem of evaluating various sizing materials and formulations, the Textile Research Department of American Viscose Corp. felt that a method which would simulate actual mill scale slashing and weaving would give the most reliable laboratory data. Since the use of full scale slashing and weaving equipment is time consuming and expensive in sizing materials and yarns, a small slasher was designed to slash short warps for weaving in a modified ribbon loom.

The small slasher which was designed simulates the operating conditions of a mill scale slasher in all the fundamental phases of slashing. It has three gear-driven, steam heated drying cylinders, 24 inches in diameter. The speed of the machine is controlled through a variable drive. A maximum temperature of 240 F is obtained on the cylinders with steam at 15 psi. The first two cylinders are coated with Teflon to reduce yarn sticking.

The yarn stretch is controlled through a variable speed drive on a three-roll quetsch. The size pan has a three-gallon capacity, and the temperature of the size can be controlled from room temperature up to 200 F. Slashed yarn is taken up on spools suitable for weaving in the ribbon loom. The take up motion is driven through a friction clutch. *(More on next page)*



Warps for ribbon loom are made on small-scale slasher; they contain a maximum of 300 ends.

Tests are made on nine-space, single shed ribbon loom, operating at 108 picks per minute.

Sizing materials

(from page 97)

A WARP containing up to a maximum of 300 ends is produced by running yarn from spools on a pin creel behind the slasher, with reeds to control the width of the warp mounted at the back and front of the slasher. The warp is taken up on a wooden spool. These spools are 6¼ inches wide with 5-inch diameter flanges. Each flange has a groove to accommodate a cord for a friction let-off set up on the loom. Heavy wrapping paper is inserted at every few revolutions of the spool to insure a warp of uniform density with end-to-end tension uniformity.

The warps are then woven on a nine-space, single-shed ribbon loom, which is equipped with a 20-harness dobby. However, the size evaluations are run with a plain weave and only a minimum number of the harnesses is used. The warps are mounted on a shaft at the back of the loom.

Entering and reeding is performed at the loom. Filling bobbins are wound on a conventional ribbon loom bobbin winder. The loom speed is standardized at 108 picks per minute.

THE TEST METHOD developed by this laboratory consists of slashing warps with sizes selected to be evaluated along with a standard control size of known weaving performance for the specific type of yarn, and count or denier, being slashed. A standard width and sley has been established for the various yarn counts and deniers which are used for these evaluations.

At the time of slashing, a complete record is kept of the measurable conditions including cylinder temperatures, size bath temperature, percent yarn stretch, etc. Notations are also made concerning such characteristics as adhesive qualities of the size, flexibility of the yarn, texture of the yarn, and the general appearance of the slashed warp.

Although each evaluation may include any number of different sizing materials or formulations, only eight test warps along with a control warp can be woven simultaneously. However, since all of the tests are conducted under controlled conditions, tests made at different times may be compared whenever necessary.

After the warps have been properly set up in the loom and reeded to a standard sley, the performance of the warp during weaving can be evaluated. The test procedure calls for the use of a standard filling, namely 150-denier bright rayon, so that no additional variable will be introduced.

The weaving test is started at 52 picks per inch and 18 inches of plain weave fabric is woven. The picks are continually increased at the rate of four picks per inch at the end of each 18 inches woven.

When ten breaks occur within 18 inches of weaving on any one of the ribbons, the test is considered finished on that ribbon. The maximum pickage for that ribbon is recorded and that warp is removed from the loom. The test continues as described above until all the warps on the loom have reached this limit.

Although the maximum pickage reached by any sample establishes a relative weaving efficiency as related to the warp size used, other characteristics such as fabric appearance, total ends down during weaving, and the general appearance of the warp in the loom may influence the final conclusions concerning the effectiveness of the sizing material or formulation which was applied to the yarn.

Experience with this test method has shown it to be a valuable tool for the screening of the many new sizing materials and new formulations which have been developed during the past few years. The procedure for the test is simple, and it can be carried out in a minimum amount of time without prohibitive costs for yarns and sizing materials.

If the data secured from the slashing and weaving test are favorable and the sizing material is economically competitive, it is then good practice to run final and conclusive evaluations on full scale mill equipment. This procedure is generally followed, even though good correlation has been found to exist between the laboratory test slashing and mill scale slashing.

Southern wool overseers hold first meeting

President Pickett

■ THE FIRST meeting of the newly formed Southern Textile Overseers Association was held at the Poinsett Hotel in Greenville, S. C., on November 3. George Pickett, first president of the organization, presided at the meeting which was attended by about 40 interested persons.

This represents the first organized group of its kind in the wool textile field in the South. Purpose of the association is to provide grounds for the production executives in the wool textile industry to meet and discuss common processing problems.

At the dinner meeting Mr. Pickett stated that the group should strive to become an important voice in textile affairs to help preserve the industry in this country.

New members were voted in at the Greenville meeting, and the next meeting of the group is scheduled for next April on a date to be announced later.

Speakers who discussed crease resistance at the morning session on Thursday included, l-r: Larry Q. Green, Du Pont Co.; Scott H. Foster, Monsanto Chemical Co.; Theodore F. Cooke, American Cyanamid Co.; and Carl W. Schroeder, Shell Development Co.

SRRL's J. David Reid (center), speaker on the Thursday afternoon program, discusses shape-holding treatments for cotton fabrics and garments with W. N. Henderson, Allied Chemical & Dye Corp. (left), and Stan Suchecki, TI's eastern editor.

Cotton chemists convene in capitol

Staff report

TEXTILE technologists and research men representing finishing plants and chemical suppliers gathered at Washington's Hotel Statler on October 3-4 to hear reports on the latest developments in the chemical finishing of cotton.

Speakers on the program of the Fifth Chemical Finishing Conference, sponsored by the National Cotton Council, discussed topics ranging from protective treatments for cotton awnings to a new process for crease proofing cotton garments by clothing manufacturers, drycleaners, or even in the home.

PROTECTIVE TREATMENTS for cotton awnings and similar fabrics exposed to weathering were discussed by two speakers. W. Norbert Berard of the USDA's Southern Utilization Research Branch discussed the results of a research program undertaken in cooperation with the National Canvas Goods Manufacturers Association to improve the over-all performance of coated cotton awnings by utilizing new materials and treatments now available.

When exposed under the subtropical climatic conditions of New Orleans, a canvas treatment consisting of 6% urea formaldehyde resin plus copper-8-quinolinolate (0.18% Cu as metal) was shown to have greater weathering durability than standard commercial awning fabric treatments. Fabrics coated with formulations based on alkyd-type synthetic resins withstood weather exposure to a greater degree than the conventional fabrics coated with natural drying oil base formulations. A considerable reduction in time required for the coated fabric to dry was obtained by the use of these alkyd resins.

Treated sewing threads which were acetylated, vat-dyed, and glazed showed an outdoor service durability more than twice that of the conventional threads tested.

George M. Gantz of Antara Chemicals Division, General Aniline & Film Corp., reported on the use of substituted benezophenones as absorbing agents for ultraviolet light. These may be incorporated in fabric coatings or in finishes applied to yarns or fabrics known to degrade in outdoor exposure. They can also markedly improve the light fastness of dyes which are faded by ultraviolet light.

WRINKLE-RESISTANT finishes for cotton fabrics and garments were the topic of discussion during the second day of the conference. An abstract of one of the papers presented is on pages 100-101.

A new approach to wrinkle resistance—its application to garments—was reported on by three speakers. The reasons why a resin finish might be applied to the garment rather than to the fabric were given by Melvin D. Hurwitz of Rohm & Haas Co.:

"Some garment manufacturers have not chosen to use treated fabrics because of the extra cost, manufacturing difficulties such as needle cutting and resistance to pressing, and some fear of reduced serviceability from loss of strength associated with resin treatment. Although we do not necessarily agree that these deficiencies are critical, the treatment of the finished garment does overcome the manufacturing difficulties while receiving the benefit of resin treatment."

Application of the resin finish might also be made by the housewife, since the resin used (a thermosetting resin of the methylol cyclic urea type) can be cured simply by pressing the garment with an ordinary steam or dry iron.

The application of crease-holding, wrinkle-resistant treatments to cotton garments by drycleaners was discussed by R. T. Graham, of the National Institute of Drycleaning, who claimed that drycleaners

*All of the papers presented at the conference will be printed in full in early issues of the *Textile Research Journal*.

are in a unique position to apply these finishes, since conventional drycleaning equipment is readily adaptable to the process. The drycleaner also has the skill and experience required.

The process is difficult to apply to garments with fancy pleats or with multilayers of fabric. Also, pressing is critical, since creases once put in are removed only with great difficulty. However, these difficulties can be overcome, as attested to by the fact that one of the staff of the National Cotton Council was wearing at the Conference a complete cotton suit, with conventional padding, to which a wrinkle-resistant finish had been applied after the suit was tailored.

Comparison of wrinkle resistant finishes for cotton

by T. F. Cooke*
American Cyanamid Co.

Abstract

NO REALLY comprehensive comparison of the various resins and accelerators applied under a wide range of conditions has been made to enable the finisher to choose the particular system best designed for the specific fabric properties desired. The work described in this paper was carried out to make such data available.

The resins studied included the most extensively used types, varied over a wide range to include not only the normally used concentrations but lower and higher solids:

Resin	% on Wt. of Fabric
Urea formaldehyde	4-20
Ethylene urea formaldehyde	2-11
Melamine formaldehyde	2-11
Modified melamine formaldehyde	2-11

The accelerators studied included the most extensively used types, applied at concentrations generally found to give optimum wrinkle recovery values:

Accelerator	Chemical Composition	% on Resin Solids
Ammonium salt	Ammonium sulfate	3.5
Alkanol amine salt	2-amino-2-methyl propanol-1-hydrochloride	7.0
Metallic inorganic salt	Magnesium chloride	12.0

Each resin was applied with each of the accelerators, giving a total of twelve resin-accelerator systems studied. The resins were applied to bleached, unmercerized, 80 x 80 cotton. The treated fabric was dried and then cured at temperatures of 275-365 F, at times varying from 0.75 to 8.25 minutes.

The time and temperature of cure were chosen to represent not only those conditions usually considered optimum but also conditions of less as well as more cure.

The treated fabric was tested for wrinkle recovery, tensile strength, tear strength, discoloration due to curing, and yellowing due to chlorine bleaching.

The statistical analysis of the data for the most part was carried out on a high speed electronic computer, which utilized over 300 sq ft of paper to record the resulting relationships between the variables under investigation and the physical properties obtained. It is estimated that the calculations would have required 20 years for one man had not the electronic computer been available.

In all cases, statistically valid relationships were found to exist between the many physical properties tested and the variables of resin concentration, time of cure, and temperature of cure.

WRINKLE RECOVERY

The effect of resin concentration on the wrinkle recovery imparted by various resin-accelerator systems is shown in Figure 1 (A, B, and C). In this figure, the curing conditions are held constant at 1.5 minutes at 350 F. The effect of accelerator on the wrinkle recovery is as follows:

1. The ammonium salt gives the lowest wrinkle recovery values for each resin.

2. The metallic inorganic salt is the most efficient for the melamine formaldehyde (MF).

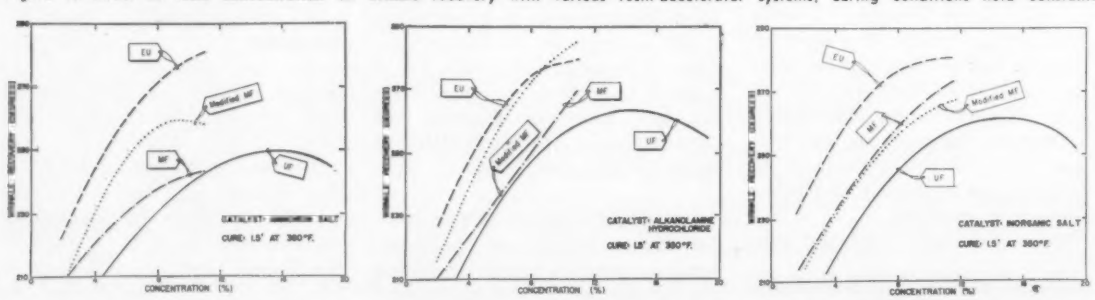
3. The alkanolamine hydrochloride is the most efficient for the modified melamine formaldehyde (modified MF).

4. All three accelerators are effective for ethylene urea formaldehyde (EU). The alkanolamine hydrochloride is slightly better than the ammonium salt, while the metallic inorganic salt is slightly superior to the alkanolamine hydrochloride.

These data show that EU gives the highest wrinkle recovery and urea formaldehyde (UF) gives the lowest wrinkle recovery. The melamine resins give intermediate wrinkle recovery values. When the alkanolamine hydrochloride accelerator is used with the modified

*Coauthors: P. B. Roth, J. M. Salsbury, G. Switlyk, and W. J. van Loo.

Figure 1. Effect of resin concentration on wrinkle recovery with various resin-accelerator systems; curing conditions held constant.



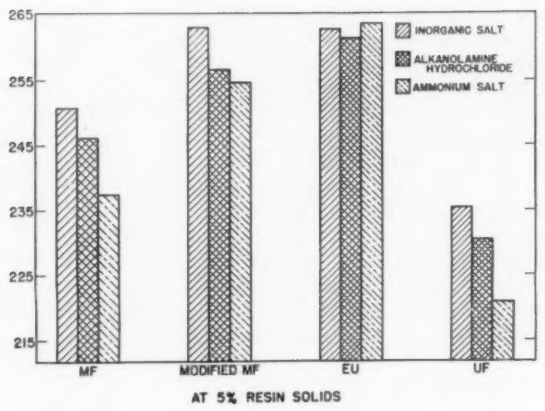


Figure 2. Maximum wrinkle recovery with certain resin-accelerator combinations at 5% solids.

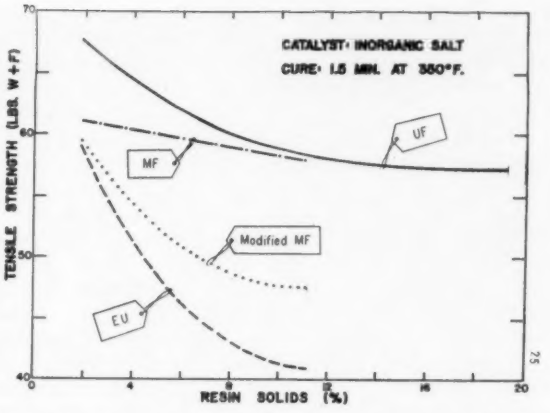


Figure 3. Effect of increasing resin solids on tensile strength, using inorganic salt accelerator.

MF, however, essentially the same wrinkle recovery is obtained as found with the EU.

The wrinkle recovery obtained with the different resin—accelerator systems varies with the curing conditions. There are three ways in which the wrinkle recovery can respond to changing curing conditions. With a modified MF—ammonium salt system, the wrinkle recovery increases as the time or temperature of curing increases. With an EU—alkanolamine hydrochloride system, the wrinkle recovery can be practically unaffected by varying the curing conditions.

A third possibility is illustrated by the EU—ammonium salt system. Here the wrinkle recovery value increases to a maximum as the temperature increases to 320 F. By increasing the curing temperature above 320 F, lower wrinkle recovery values are obtained.

The maximum wrinkle recovery obtained with a given resin and accelerator combination at 5% solids is shown in bar graphs in Figure 2. This summary shows that the metallic inorganic salt gives a wrinkle recovery value equal to or greater than that obtained with the other accelerators with all four resins.

The ammonium salt accelerator gives the lowest wrinkle recovery for all the resins except for EU, where it is equal to that obtained with the metallic inorganic salt. The modified MF and EU resins give the highest wrinkle recovery, while the UF gives the lowest wrinkle recovery.

In interpreting the data in Figure 2, one must be careful. The maximum wrinkle recovery may have been obtained, but other fabric properties such as color, for example, may be unsatisfactory.

In general, the melamine resins have greater durability of wrinkle recovery to repeated washes than the ureas. Neither of the melamine resins shows an appreciable decrease in wrinkle recovery after repeated washes when the metallic inorganic salt accelerator is used.

When the melamine resins were applied with the alkanolamine hydrochloride accelerator, the MF showed excellent durability and the modified MF only a slight loss in wrinkle recovery after repeated washes.

Although the wrinkle recovery values of the EU finish are very high initially, they generally show the greatest loss after repeated washes.

TENSILE STRENGTH

Figure 3 shows the effect of increasing resin solids on tensile strength. As can be seen, UF and MF finishes have higher strength than the other resins at any given solids. The EU finish has the lowest strength.

The EU and modified MF finishes have a lower tensile strength than the other finishes at equal wrinkle recovery values. In general, the rate of strength loss with increasing wrinkle recovery is greater for EU than for modified MF. With the metallic inorganic salt accelerator the MF finished fabric shows no appreciable change in strength as the wrinkle recovery increases. The strength (warp plus filling) remains fairly constant at about 58 - 60 lbs.

These data indicate that when the tensile strength of the treated fabric is critical, the MF with the metallic inorganic salt should be considered for finishing the fabric.

UF finished fabrics generally show the greatest strength loss with repeated chlorine washes. The melamine finished fabrics in most cases show the least change in strength with repeated washings. The EU treated fabrics generally increase in strength as washing proceeds.

The data below show that after one chlorine wash the amount of chlorine absorbed by the EU and melamine finishes is much less than that absorbed by the UF finish.

Resin	Solids	% Available Chlorine
UF	4.2	0.4
	10.2	0.7
EU	6.5	0.1
	10.2	0.1
MF	6.5	0.1
	10.2	0.1
Modified MF	6.5	0.1
	10.2	0.1

DISCOLORATION

A fabric may discolor during resin treatment or during washing in the presence of chlorine bleach. Initial yellowing (resulting from curing—not chlorine bleaching) is affected by the temperature of the curing cycle. In general, the degree of initial yellowing tends to increase with increasing temperature. The rate of increase and the

degree of yellowing is lowest when the metallic inorganic salt accelerator is used. At the higher temperatures EU generally yellows most.

The degree of initial yellowing increases with increasing cure time. Here again, resins applied with the metallic inorganic salt yellow the least. EU finished fabrics yellow more than the other resin finishes when alkanolamine hydrochloride and ammonium salt accelerators are used.

Increasing the curing temperature or time with melamine resins generally decreases yellowing due to chlorine (EU and UF resins do not yellow). It is significant that the use of the metallic inorganic salt results in much less yellowing due to chlorine retention than the other accelerators under the same curing conditions.

Yellowing of modified MF treated fabric due to chlorine with the metallic inorganic salt is hardly noticeable to the eye, regardless of cure temperature. There is very little yellowing with the alkanolamine hydrochloride. Yellowing with the ammonium salt accelerator is noticeable to the eye.

It is interesting to note that the time of cure is not an important factor. In fact, with this type of resin which has very good resistance to yellowing, even the temperature of cure has little effect on the degree of yellowing.

TEAR STRENGTH

A statistical analysis of the tear strength values showed no correlation between this property and other factors such as wrinkle recovery and resin concentration. Furthermore, the tear strength values were not reproducible, apparently because tear strength is influenced by other factors, such as stiffness, which varied with the application conditions. All the fabrics were, therefore, mechanically manipulated by dry tumbling to break down the stiffness and the tear strength values redetermined.

After this treatment there was a correlation between tear strength and other properties; however, there are no large differences in the wrinkle recovery and tear strength relationships for the different systems studied.

SUMMARY

The EU finishes generally have the highest wrinkle recovery for a given resin solids, and the UF the lowest. The melamine resins are intermediate, with the modified MF equalling the EU under optimum curing conditions.

Of the four "resins" studied the EU is the fastest and the MF the slowest to cure, with the modified MF and UF being intermediate in this respect.

The durability to chlorine washing of the melamine resins is considerably greater than that of the EU or UF resins.

The MF and UF finishes generally have a higher tensile strength than that of the modified MF and the EU finishes for a given wrinkle recovery.

The melamine resin treated fabrics show little loss in strength on continued washings in the presence of chlorine. The tensile strength of the UF treated fabric decreases rapidly with successive washes in the presence of chlorine. The EU finished fabric did not decrease, and in some cases increased in tensile strength on continued chlorine washing.

There is little loss in strength with the AATCC accelerated chlorine test with EU and melamine resin treated fabrics that have been satisfactorily cured. With the UF treated fabric, most of the strength was lost under these conditions.

The initial yellowing of the treated fabric during curing is generally greater with EU than with the others. There is no yellowing of EU or UF and very little yellowing of the modified MF treated fabric during continued washing in the presence of chlorine, but MF treated fabric does yellow.

There is little difference between the resins from the standpoint of the tear strength of the treated fabric for a given wrinkle recovery.

The ammonium salt in most cases is shown to be the poorest accelerator studied. Generally, the metallic inorganic salt accelerator shows itself superior to the alkanolamine hydrochloride; however, the alkanolamine hydrochloride accelerator provides more rapid cure than the metallic inorganic salt accelerator. The metallic inorganic salt gives outstanding results with MF.

Under certain conditions, the alkanolamine hydrochloride gives superior wrinkle recovery with modified MF; however, from the standpoint of initial color and the effect of chlorine on the treated fabric, the metallic inorganic salt is generally superior to the other accelerators.

Sweater uses new-type Helanca yarn

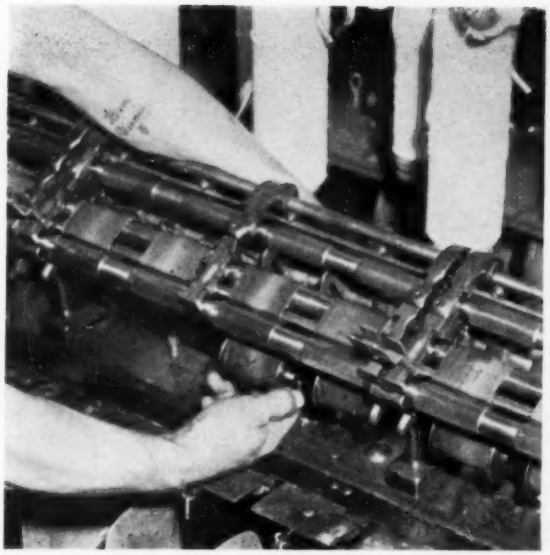
■ THE FIRST week in November women saw in stores a new type of sweater which can be tossed into automatic washers, including the spin cycle, and then put in automatic dryers to come out looking like new, time after time.

This sweater has a crepe appearance, doesn't pill or form fuzz balls, has good wear resistance, and keeps its shape without blocking. First models are cardigans and short sleeve pull-ons.

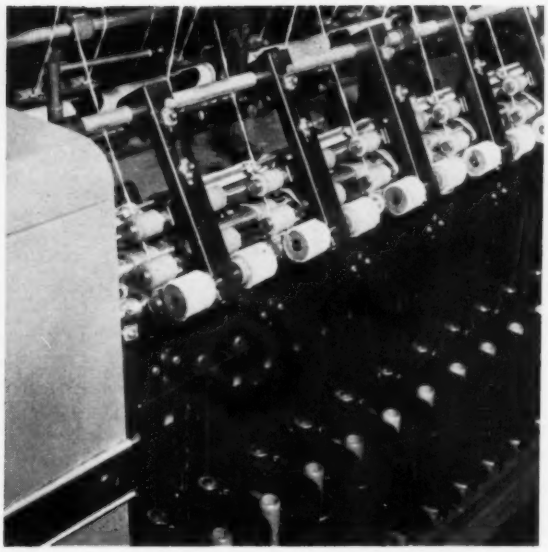
The sweaters are made of the new Type SW Helanca yarn. This yarn has just enough stretch to give draping qualities to a sweater. Sweaters are made in regular sizes and are *not* called stretch sweaters.

This type of Helanca yarn is reported to overcome the difficulty experienced by many women when they push their sweater sleeves up their arms, only to find the cuffs stay baggy when sleeves are pushed down. Similar changes in neck and sweater bottom sizes are said to be eliminated by the new yarn.

First knitter to make deliveries was Boepple Sportswear Mills, Inc., New York City.



Treated leather aprons on Saco-Lowell Roth spinning. Aprons are examined and repaired or replaced at the time frames are overhauled in this mill.



Fewer ends down were noted on Gwaltney frames equipped with treated leather aprons, and apron life was notably longer compared with untreated aprons.

Better spinning with treated leather aprons

Fewer ends down and no lint buildup, at lower cost

Staff prepared Exclusive

ONE North Carolina cotton mill is using treated leather aprons on Saco-Lowell Roth spinning on approximately 60,000 spindles running on 6½s to 20s cotton. These treated leather aprons have given longer life with fewer splices and replacements than other leather aprons, and there is no apparent stretch, according to officials in this mill.

The aprons run true, and fewer repairs have been found necessary. Aprons are examined and replaced at the time frames are overhauled in this mill.

The treated leather aprons have been in use for three to four years, and tests have shown lower cost compared to other types of aprons tried here. There is no lint collection or buildup on the leather surface, and the treated aprons appear to roll off lint that would otherwise accumulate, according to one mill man.

PRODUCTION is improved by having fewer ends down and with subsequently better weaving. Representative records in this instance showed that on 1200 spindles, seven aprons were replaced after four months of operation with treated leather.

Spindles are out of production for less time when an apron breaks. The time loss has been cut in half by the quick repair procedure which is standard on the new-type treated leather aprons.

The leather aprons now used are already cut to correct length, and are ready for installation by clamping the glued ends together.

Another mill installed treated leather aprons on Gwaltney frames, and they proved to last one third longer than types previously used. These aprons produced better work, and there were 8-10% fewer ends down.

Some other aprons had a tendency to pull to one side, sometimes causing an end to run off the apron and break. Also, the treated aprons do not crack, split, and become "stringy" and easy to tear. These treated aprons are more flexible than untreated aprons and have no tendency to stretch or become brittle, according to one mill man.

The aprons are also uniform in length, width, and thickness, thereby improving uniformity of yarn; and an even draft is evident. This mill spins 30s and 40s cotton yarns. Singleton aprons were used in these mills.

Use these special ties to

Increase Jacquard Capacity

by Osbert Hughes
Exclusive

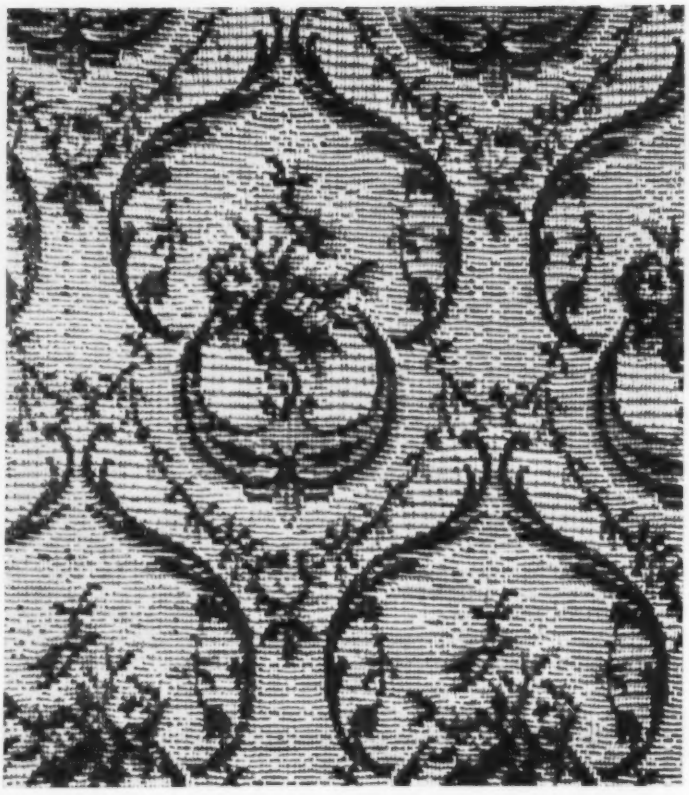


Figure 1. Tapestry fabric woven with an ordinary straight tie on a 4 x 4 box loom. Over-all sley was increased 25% by drawing in the ground warp two ends per eye.

A MILL engaged in the manufacture of upholstery, drapery, bedspreads, and other decorative and novelty fabrics will usually plan Jacquard harness ties to cover as wide a range of fabric constructions as possible. This is as it should be; because of the quite considerable expense of tying up a Jacquard loom the tie is not usually, except as an emergency, dismantled and replaced until it is worn out. Therefore, full consideration must be given to the present and future needs of the weave room when Jacquard ties are being planned.

When it is desired to make fabrics with a lower sley than called for by the Jacquard tie, it is a relatively simple matter to obtain this effect by casting-out certain hooks, or rows of hooks, in the Jacquard. Obtaining a higher sley than that for which the Jacquard has been tied up presents a different problem.

A different problem is also presented if a wider repeat is desired than that for which the Jacquard has been tied. It will also sometimes be desirable to tie up Jacquards for a higher sley and a wider repeat than the normal capacity of the available Jacquards would permit if an ordinary straight tie were used.

There are various ways in which these different results may be obtained, and the purpose of this article is to briefly outline some of the methods that can be used.

Multiple Ends Per Eye. Probably the simplest and most generally used method for increasing the sley of a Jacquard already tied up is to draw two or even three ends per eye on a portion of the warp. The ends drawn together through the same eye will naturally weave alike, but there are many fabrics that feature weave effects of this type.

One such fabric, a tapestry for upholstery use, is illustrated in **Fig. 1.** This tapestry has been woven on an ordinary straight tie and a 4 x 4 box loom. The warps are drawn in as follows: Plant warp on 1-5-9 hooks, green warp on 2-6-10 hooks, gold warp on 3-7-11 hooks, all of the foregoing being drawn one end per eye.

The ground warp is on 4-8-12 hooks and is drawn in two ends per eye. Thus by drawing the ground warp in this manner a 25% increase in over-all sley is obtained. The designing and card cutting remain the same as though the ground warp was kept at one end per eye.

A Wider Repeat Than the Tie. It will sometimes happen that a mill in which the Jacquards have been installed with a standard straight tie will want to weave a design with a wider repeat than that for which the tie was originally planned. This can be done in the following manner.

The odd-numbered hooks should be cast out in the odd-numbered sections of the comber board, while the even-numbered hooks will be cast out in the even-numbered sections. Thus the sley will be re-

duced to exactly one-half that of the tie. This reduced sley can, of course, be increased by drawing-in two or three ends per eye, as described above. The width of the repeat of the design will be exactly twice that of the original tie. Thus the gain in width is obtained at the expense of the loss in sley.

The design will be made for the full double repeat, being painted on the same number of hooks as for the original tie, the card cutting instructions being so written that the card cutter will cut the correct portion of the design on the correct hooks. No castout will show on the cards themselves, all hooks being cut on the cards, although one-half of the eyes are empty of warp ends.

For example, one Jacquard tie in very general use is a fine index Jacquard tied straight using 1280 hooks to a repeat 6¾ inches wide, eight repeats in the finished width of 54 inches. This tie has 10,240 ends, which is approximately 190 sley, so that by casting out one-half of the eyes in alternate sections of this particular tie a fabric can be produced that will have a repeat 13½ inches in width, four repeats in 54 inches finished width, with a basic sley of 95 ends per inch. This basic sley can of course be increased by drawing two or three ends per eye on selected hooks.

Combination of Jacquard and Shafts. Increasing the sley of a given Jacquard tie by placing certain warp ends on shafts is a common practice in many Jacquard weaving mills. There are a wide range of fabrics that are constructed by using two or three warps on separate loom beams, with one of these warps serving as a ground or binder warp and weaving plain weave or some other fundamental weave throughout the goods. This ground warp may readily be placed on a proper number of harness shafts, and there are several ways in which the operation of these shafts may be positively controlled.

Very often the Jacquard itself is used to impart a plain weave motion. At other times certain extra hooks to the tie can be set aside for this purpose, or if so desired a regular head motion can be used to control the harness.

When designing and card cutting for this type of fabric no attention need be given to the shaft-controlled ends, since these will weave automatically. The weave diagram in **Fig. 2** shows a fabric of this type, made with four ends of face warp to one end of ground warp. The face warp is controlled by the Jacquard, the ground warp by the harness shafts. In this diagram the face warp is represented by crosses, the ground warp by solid squares, and it will be noted that plain weave is used as the ground warp weave so that only two harness shafts would be required to weave the fabric.

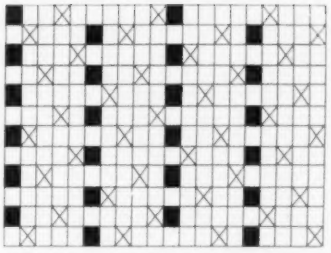


Figure 2. Weave diagram for a fabric woven with a combination of Jacquard and shafts. There are four ends of face warp to one end of ground warp. The face warp is controlled by the Jacquard, the ground warp by the harness shafts.

Two-Scale Tie. One type of Jacquard tie that can often be used to very good advantage in the manufacture of decorative fabrics is known as the "two-scale" tie. This tie has the feature of exactly doubling the capacity of the Jacquard over what it would be if an ordinary straight tie were used. "Two-scale" simply means that two lines, two eyes and lingoes, and two warp ends are controlled by one Jacquard hook in each repeat, instead of the single line, eye, lingo, and warp end normally controlled by one hook in an ordinary straight tie.

Fig. 3 shows the layout of the

Figure 3. Layout of the hooks and the arrangement and interlacing of the lines, eyes, and lingoes for a two-scale tie. Note that each hook controls two warp ends in each repeat, but that these two ends are separated from each other by another end, rather than being drawn in side by side, to permit a true plain weave or other weaves.

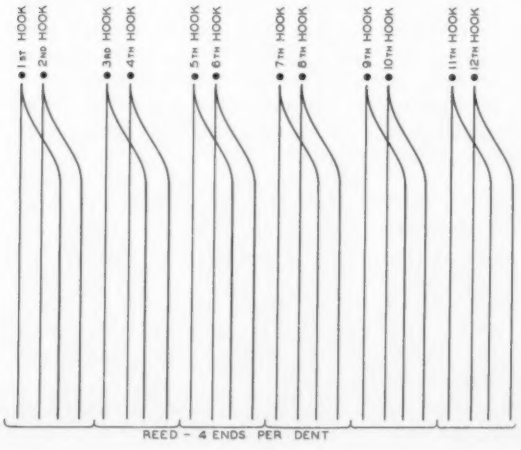
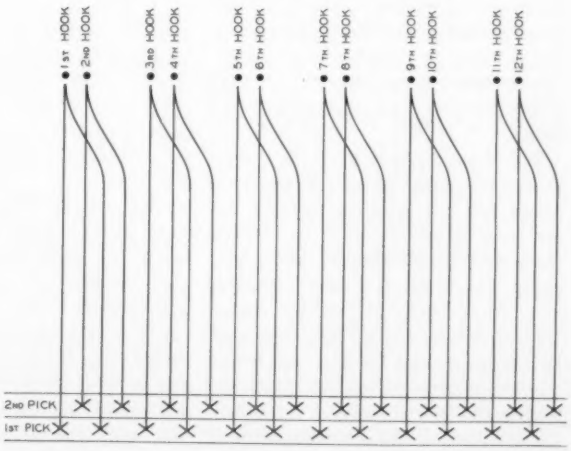


Figure 4. How plain weave is produced on a two-scale tie; the odd hooks are cut only on odd-numbered cards and the even hooks only on even-numbered cards.



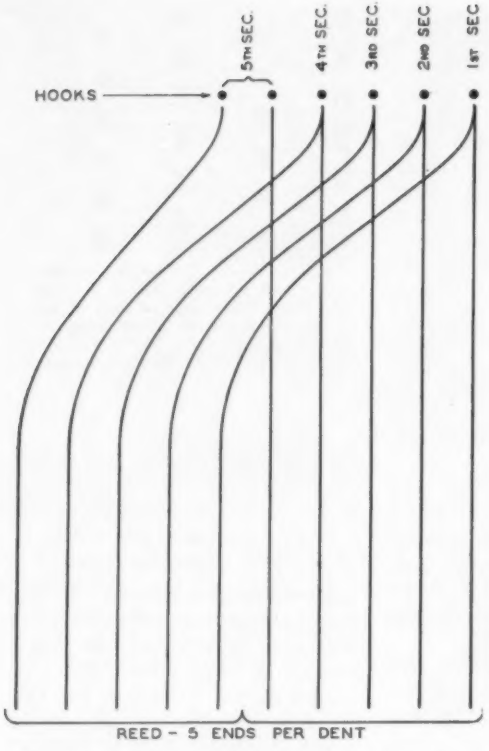


Figure 5. Arrangement of the sections and system of drawing-in for a standard section tie. Each hook of the first four sections controls two ends in each repeat.

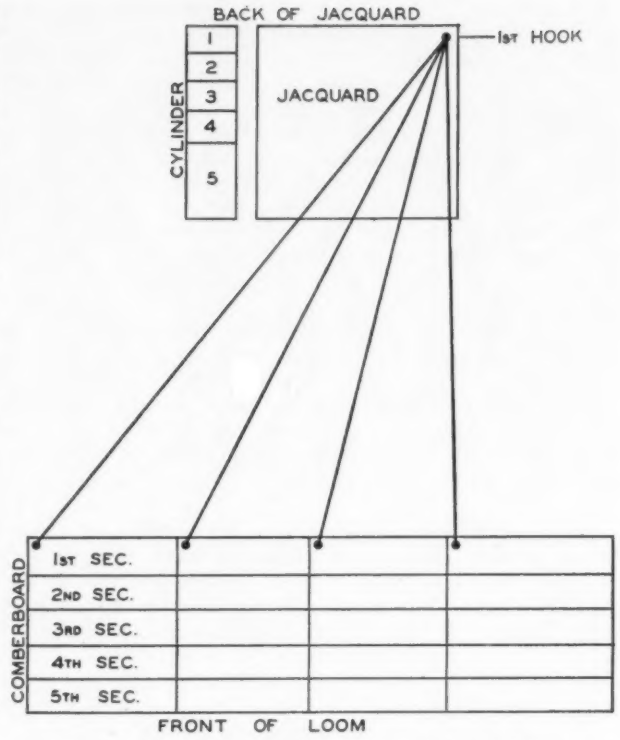


Figure 6. Comberboard and hook arrangement for a section tie on a fine index Jacquard. The first section is drawn in on the back of the comberboard and the fifth section is at the front.

hooks and the arrangement and interlacing of the lines, eyes, and lingoes for the two-scale tie. It will be noted that each hook controls two warp ends in each repeat but that these two ends are not drawn in side by side but are separated from each other by another end, thus permitting a true plain weave and other weaves to be obtained. However all warp risers will appear in pairs, and there will be a slight though hardly noticeable "steppiness" to the outline of the figures due to this double end effect.

Fig. 4 shows how plain weave is produced on the two-scale tie. The cards are cut odd hooks only on odd-numbered cards, even hooks only on even-numbered cards, the same as on an ordinary straight tie. There are, of course, some limitations to the effects that can be made on this tie but the large variety of weaves that are possible makes the two-scale tie a very useful addition to the average decorative fabric weave room.

Standard Section Tie. A standard sectional two-scale tie that is very extensively used for upholstery and drapery fabrics is laid out as follows. The Jacquard can be either a fine index single machine or a French index double machine. In either case there are 1152 hooks to a 13½-inch repeat, with four repeats to the 54 inches finished width of the goods. The sley is approximately 142 ends per inch, as compared to the sley of approximately 85 ends per inch that would be obtained on an ordinary straight tie.

The standard section tie consists of four sections of 192 hooks each, tied two-scale, plus one section of 384 hooks tied single-scale. All of these five sections are placed on a single machine of the fine index Jacquard. On the double machine of the French index, three two-scale sections are placed on the back machine, with one two-scale section and the single-scale section being placed on the front machine.

The diagram in **Fig. 5** shows the arrangement of the sections and the system of drawing-in through the harnesses. In this diagram the hooks shown are the No. 1 hook of each of the 1st, 2nd, 3rd, and 4th sections; and the No. 1 and No. 2 hooks of the 5th, or single-scale, section. This diagram shows how each hook of the first four sections controls two ends in each repeat.

Because of the method of drawing-in and reeding these ends, their spacing is much more uniform in the goods than if they were merely drawn in two ends per eye on an ordinary straight tie. This is a distinctive feature that makes it fairly simple to determine, when analyzing a fabric, whether it was woven on a section tie or straight tie with double ends per eye.

On the fine index Jacquard the hook usually known as the No. 1

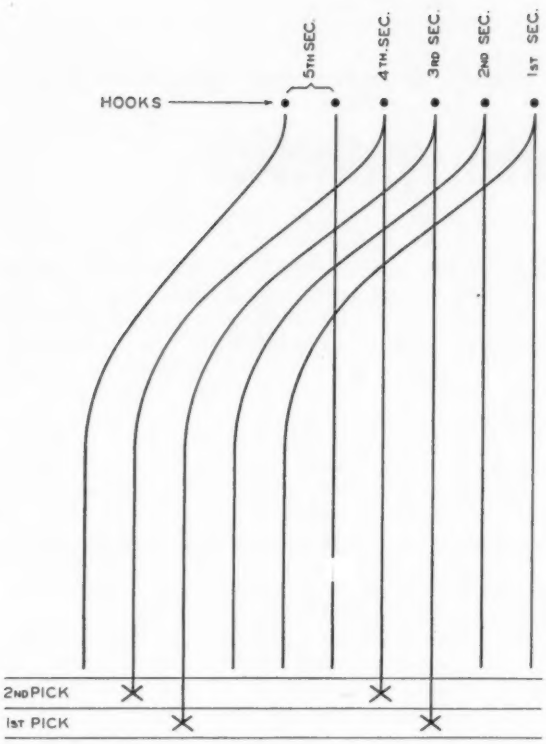


Figure 7. Layout for a matelasse-type tapestry fabric, using two sections for the plain weave of the matelasse and two sections for the tapestry weaves, retaining the fifth section for the binder warp.

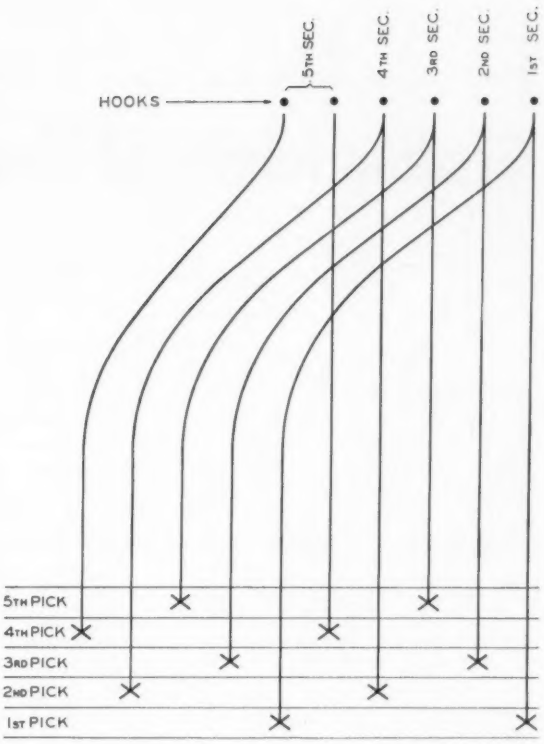


Figure 8. Layout of a solid color warp for a five-harness satin warp fabric of the damask type.

hook of the fifth row becomes No. 1 hook of the 1st section, No. 1 hook of the 17th row becomes No. 1 hook of the 2nd section, No. 1 hook of the 29th row becomes No. 1 hook of the 3rd section, No. 1 hook of the 41st row becomes No. 1 hook of the 4th section, and No. 1 hook of the 53rd row becomes No. 1 hook of the 5th or single-scale section. The 1st section is drawn in on the back of the comberboard, through the other sections, with the 5th section being on the front of the comberboard, as shown in **Fig. 6.**

All designs made for this section tie will be painted on 192 hooks, to a repeat of 13½ inches. Most weave effects can be indicated on the design in solid colors, so that the designing and card cutting for this tie will be found to be greatly simplified over that required for a straight tie, with a corresponding reduction in cost for these items. Thus the considerable increase in the normal sley capacity of the Jacquard plus the simplified, quicker, and less expensive designing and card cutting of the sectional two-scale tie more than compensates for its minor disadvantages as compared to the ordinary straight tie.

Many different types of fabrics are woven on this tie. Shown in **Fig. 7** is the layout for a matelasse-type tapestry, using two sections for the plain weave of the matelasse and two sections for the tapestry weaves, retaining the 5th section for the binder warp.

Fig. 8 is the weave diagram of a solid-colored warp for a five-harness satin warp fabric of the damask type. A study of these last two diagrams will show the general principles involved in fabric planning for this tie.

If castouts are decided upon to reduce the sley, they can take one of two forms. Selected hooks, or rows of hooks, may be cast out in each section. This will have the effect of reducing the over-all sley while retaining the five-section feature of the tie.

Another method is to cast out one or more complete sections. This has the effect of reducing the over-all sley but, while eliminating the one or more sections that are cast out, maintaining the full sley of the sections that are retained.

In extreme cases a combination of both of these castout methods can be used. The section two-scale tie does have some limitations as to the weaves that may be employed, but its many advantages make it well worth using in addition to the ordinary straight tie.

Your 1956 Index

of articles appearing in "Textile Industries" is in this issue. Look for it in the back of the book beginning on page 215. Keep your index. It is a convenient reference for information on textile manufacturing subjects.—THE EDITORS

Point system enabled this plant to up cloth quality, determine best dye shades, while

Grading fabrics of blended synthetics

by Maley Chagro
Exclusive

A PRIME advantage in grading cloth by the point system is that the system allows all defects to be weighted according to merit. The sum of the defects then determines the final cloth grade.

In dealing with synthetics blends the point system permits the assignment of a particular piece (70-75 yds) to the color depth which will aid in reducing the gravity of the defects. Thus it is that a perfect piece of cloth can be dyed a pastel shade; while imperfect cloths can be consigned to deeper shades as the imperfections increase in number and in gravity.

The above benefits can scarcely be claimed by systems which permit cloth to be graded by the magnitude of the defect occurring most often, or other such inconsistent practices. Furthermore, such systems do not lend themselves to a good quality control routine between the cloth and the weave room.

Under the point system all defects are listed, and the points assigned to each defect depend upon the seriousness of the defect itself. Thus common defects (which can be classified as minor under the point system) receive the smallest point allotment, and the classified major defects the highest.

The sum total of the points can be used as a yardstick in determining the quality and recommended shade; conversely, the recommended shade will almost invariably indicate the grey quality. Under this system all defects are given equal scrutiny in the over-all drive to eliminate or minimize them.

ONE MILL, using the point system to grade synthetics blends in the grey, arbitrarily set up point limits for the classification of pastels, medium, dark and "as are" shades. The nucleus for the point system is derived from the standards (or grades) established by the mill for converted goods, as indicated in the box on this page.

Using the standards as a guide the mill's point classification of major and minor defects did not overlook the fact that minor defects, if abnormally high, affect the finished grade as much as do common major defects. Thus a piece in the grey, with abnormally high minor defects and few common major ones (or extraordinary imperfections), was immediately brought to the attention of the departments involved — and the quality drive was on before and not after converting.

The point system listed 39 known defects with others added as they became known, which occasionally occurred when a finished piece revealed a non-visible defect or a visible defect not classified as such in the grey. The form in the accompanying illustration shows the visible known defects and assigned points.

Unusual defects, or defects that become known after dyeing, were added to the cloth inspection report for final analyses by the mill. Occasionally defects can be traced all the way back as far as the picker, where the blending and tinting operations may have had a direct or indirect connection with a piece adjudged faulty.

Only high soluble tints were used to identify the blends in process; gray or black tints were never used because of the difficulty of scouring out before dyeing. Experience, of course, is the best teacher, and any new blend or any new tint was thoroughly tested before being used.

On one occasion a piece was returned to the mill with a high frequency of start-up marks, most of which were not visible in the piece when examined in the grey. A dark color was used to identify the stock

Group Standards or Grades for all Converted Synthetics Blends

Piece: A finished length of 70/75 yards. If the piece is considerably longer or shorter than that, the allowable number of defects is increased or reduced proportionately to the length of the piece.

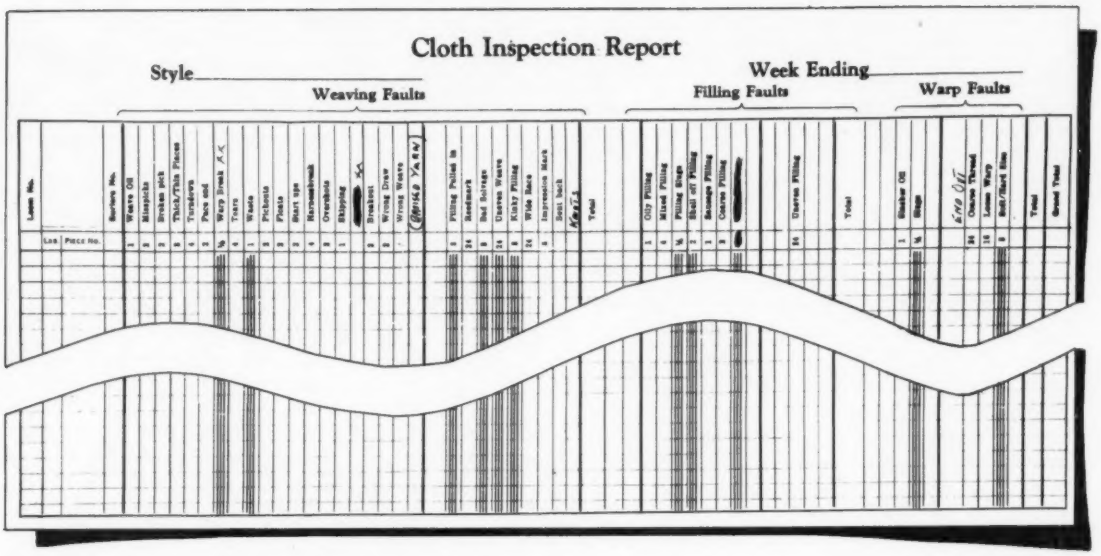
Firsts: Pieces with less than 10 major defects. Minor defects such as small slubs, short yarn, breaks, etc., are not counted unless they are abnormally numerous, in which case they are taken into consideration when the piece is graded.

In firsts, common major defects such as light start-up marks, broken picks, mispicks, and short warp or filling breaks are considered to determine the grade; but no strings are placed nor allowances given.

In firsts, however, strings are placed for extraordinary imperfections or damages such as holes, wrong filling, bad stains, or very prominent weaving defects; and in such cases, a reasonable allowance is given and indicated by the long and short yardage on the piece tickets.

Seconds: Pieces with more than 10 but less than 20 major defects. In seconds no strings are placed nor allowance given. Only the long yardage is put on the piece ticket. The tickets for such pieces are stamped "second" on the face of the ticket.

As Ares: Everything worse than seconds. The tickets of such pieces are stamped "as are" on the face. On the back of the ticket is the major reason for grading "as are."



Practically all the defects listed are self-explanatory, while a few are termed with words coined by the mill to differentiate from other defects of somewhat similar appearance. Thus a "turndown" in this mill means the filling grate on the loom was plugged with lint and the side fork stop motion did not activate when the filling broke. Wrong draw and wrong weave are immediately called to the attention of the supervisor — the final classification of the piece depends on the gravity of the defect. Bruised yarn and knots, are defects visible after converting. Point limits can be changed whenever it is deemed necessary.

in process and this added to the difficulty in revealing the start-up marks in the grey inspection.

One piece with such a frequent defect may not be indicative of a general epidemic; but other pieces soon followed — all pieces of the same style — and were traced to two sets of weavers' looms.

Obviously most start-up marks are made when the loom is idle for some length of time and then started up. These looms ran continuously for 16 hours a day, stopped, and then started up again on the first shift.

An inspection of the looms when stopped showed that most of the lays on the looms were at front center. It was obvious that the first stroke of the lay when the loom was started up would be a weak one into the fell.

A further inspection of the weave room revealed that the greater proportion of the stopped looms showed the lays at front center. The weavers were quickly instructed that, whatever the cause of stoppage, the lay should start at complete back center for a full and stronger stroke into the fell.

On flat fabrics this particular defect, classified as a minor one, if not eliminated or greatly minimized can and will become a major quality problem. Though start-ups occasionally afterwards on this style made an appearance, the heavy frequent incidence of them disappeared. In essence the defect became minor.

What was classified as chafe marks in the converting report, and for which no defect in the grey was listed, didn't prove so much of a problem in determining the damaged caused. But the constant appearance of the defect in many of the converting grade reports proved to be a puzzler.

In the point system chafe marks were finally classified as bruised yarn and so entered without any point allotment. But a notation was entered indicating the repetition of the defect in any given piece. Bruised yarn occurred mostly in places where other defects such as slubs, etc., were removed.

Determined to trace the source of this damage, management traced by piece number a group of the converter's grade reports with the original grey reports.

All piece numbers so compared were burled by the same inspector. This indicated extremely poor methods in removing other defects also.

Without the burler's number on the cloth inspection reports in the grey, the chance of discovering the source of this fault would have been slim indeed. It was soon learned that the burler, in removing other defects, was badly damaging the yarn surrounding the defect. Proper methods were carefully shown and explained, and all burlers were allowed to see this defect in the finished cloth.

All blended synthetic yarns in the mill were first slubbed before warping and weaving. Each end breakage in the process was repaired with an automatic knotter. But not every knot would weave to the back of the cloth — too many of them would weave on the face.

In the dyeing process the "knob" of the knot would invariably be off-shade and stand out like a sore thumb. After careful consideration, it was decided that the inspectors should push all visible knots from the face of the cloth through to the back.

As an extra precaution the palm of the hand was passed over the face to feel if any knots were bypassed. This brought a vast improvement in the finished cloth. Pushing the knots to the back of

Shade Report (Percentages)
All Styles

		W/E			
	Pastel	**Medium**	**Dark**	**As Are**	**Totals**
Points	1-15	16-30	31-70	71-?	
Pieces:	155	57	18		230
		Pastel:	67.391%		
		Medium	24.783%		
		Dark:	7.826%		
			100.000%		

the cloth became a standard procedure.

Perhaps one of the most important features of the point system, and which is lacking in many others, is the fact that all minor defects can be carefully checked and observed, and something done about them. All defects of rare occurrence should, of course, be entered on the cloth inspection report in spaces where no defect is listed and should be considered in the final grey percentages and shades.

As a guidepost, the point system can only point in one direction — the way to sustained high quality, while at the same time pointing up all defects and hiding none. Its value is further enhanced when employees are shown the cloth inspection report along with impaired cloth from their operation.

The shade reports contain a weekly analysis of all pieces inspected and burled, and all minor defects with point allotments are included, though many of these are disregarded in the converting standards unless they are abnormally high. Thus many pieces assigned to "Medium" and "Dark" shades are classified eventually as firsts of varying grades in the final determination of quality.

The percentages shown in the shade report will vary from time to time with the finished converter's report, thus giving further light on hidden defects in the grey; and also some visual defects in the grey that were not visible after dyeing. A study of both the converter's report and the shade report is most helpful in attaining the best results.

The accompanying shade report, taken at random, does not indicate the total number of pieces woven in a given week, only the total results of the pieces inspected and burled.

Printing wool with vat dyes

by Gerald Laxer
The Wool Bureau, Inc.

Abstract*

■ PRINTING on wool has not, up to the present, ever been as popular or successful as printing on cotton or rayon fabrics. To make wool fabrics accept printing colors, the natural water repellent nature of the wool fiber's surface must first be overcome, usually by chlorination.

The highest fastness to washing then calls for the use of vat dyes; these in the past have always had to be applied to wool under alkaline conditions, and in consequence heavy damage and loss in strength was always liable to occur during subsequent processing. For all these reasons the risks of applying vat colors to wool have usually been too great.

Manofast**, or thiourea dioxide revolutionizes this situation, since it is an effective *acidic* (pH5) reducing agent for vat dyes which have an affinity for wool. Under the Manofast-printing conditions, the average loss in strength of a chlorinated wool taffeta is between 8 and 10 per cent against unprinted cloth. On the other hand, the same fabric undergoes a 20-27 per cent reduction in strength when it is vat printed by the alkaline (Rongalite) process.

A typical screen printing formula using Manofast is as follows:

10-20%	Dve
5%	Manofast
10%	Polyethylene glycol
3%	Solution Salt SV (I.C.I.)
10-20%	Water
52%	British gum

After printing, the fabric is steamed for 8 - 10 minutes at 100-102 C, rinsed in cold water, oxidized with hydrogen peroxide and ammonia or sodium percarbonate at 60 C, and finally soaped.

A further point in favor of Manofast is its high stability on the printed wool prior to steaming. Slightly acidic solutions of Manofast only develop reducing power at elevated temperatures, particularly around 100 C, in presence of moist heat.

The resulting color prints have excellent fastness both to washing and light. Moreover, good color yields and exceptionally bright prints can be obtained with vat dyestuffs. Indigoid, thioindigoid, and anthraquinonoid vat dyes can be used on wool with Manofast.

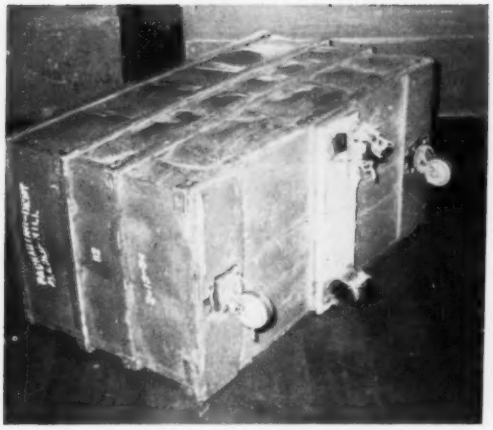
In addition to ordinary straight prints, very good discharge prints can be obtained with wool. For the purpose of discharge printing either metal complex dyes such as Neolans or Palatine Fast colors can be used, or vat dyes can also be discharge printed. Because of the stability of Manofast at room temperatures, delays of up to two months may be allowed before steaming and yet a perfect discharge can be obtained.

Printing on knitted wool fabrics has not been very widely practiced previously, but very pleasing results are now being obtained in England on these as well as woven fabrics.

*From a paper presented at the Fifth Canadian Textile Seminar, Kingston, Ontario.

**Trademark, Hardman and Holden Ltd., Manchester, Eng'and.

Result of using improper casters — failure of tilt wheel and felting of fibers on load wheels.



Swivel casters on this truck have thread guards; load casters do not. Note difference in thread pick-up.

For better mill truck performance,

Choose casters designed for the job

by W. C. Shea
The Colson Corp.
and
Paul E. Wrenn
Wrenn Brothers
Exclusive

ONE OF THE MOST difficult problems facing the manufacturer of materials handling equipment is the design of such equipment for the textile industry. While the casual observer might very well assume that manufacturing trucks and casters for use in the heavier industries might pose a greater problem, requirements in the heavier industries involve mostly weight capacities and overall strength of the equipment, while textile plant needs embrace these problems, as well as many others.

The textile plant manager finds that one of his biggest headaches is the selection and maintenance of the equipment on which he is dependent for the steady flow of production. Principal troublemakers in textile mills, in respect to materials handling, are fibers, which can create a very real materials handling hazard.

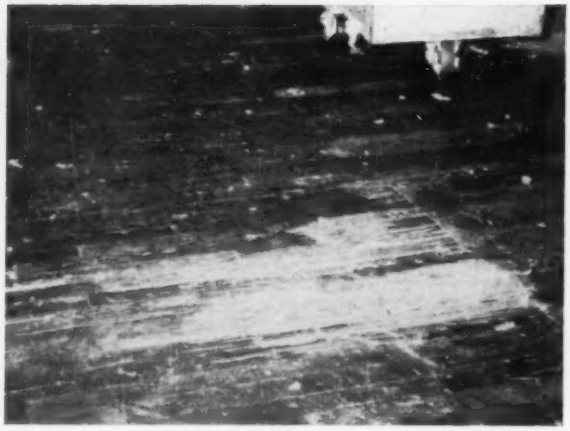
Secondary problems are created for the textile plant manager by the chemicals used in certain phases of textile processing, drain pipes, floor drains, and drain plates necessary to these phases, and the variety of floor surfaces found in textile plants.

The caster problem in textile plants takes on added complexities when improper casters are used, because badly eroded floors result. Another problem is the varying loads found in textile plants. The same amount of materials can vary more than 100 per cent in weight, depending on moisture retention of the fabric. Thus casters with capacities much greater than the dry-weight of the load must be used. For example, one company selected and found successful a swivel caster with a load rating of 500 pounds for loads with a variation of from 300 pounds to approximately 1,000 pounds due to presence of moisture. A truck with four 500 pound capacity casters thus has a combined capacity of 2,000 pounds.

Textile plant managers also should be alert to savings which can be achieved with casters having replacement parts. Such a caster obviates the expensive necessity of replacing the entire wheel when one of the parts wears out. These casters have replaceable tires, bearings, swivel races, wheel disks, and fork sides. In almost any size plant, savings can be made with such a unit.

Generally, it has been found that rubber-tired wheels are the best solution to the problem of floor protection where concrete is concerned. However, on wooden floors, especially in spinning areas, the travelers which become imbedded in the floors are a specific caster hazard as far as rubber tires are concerned, because they wear the tire down quickly.

For very heavy loads on maple floors, either plastic wheels or cast steel are most successful. The plastic wheel offers better floor protection, the cast steel longer wheel life. Of course, for maximum floor protection, good bearings are a must. For lighter loads on wood floors, either a solid hard rubber or a replaceable rubber-tired wheel where travelers are not present,



Casters like this . . . . . caused damage like this.

or a machined cast steel wheel are satisfactory.

In many cases, plastic wheels are successful, since they do not damage floors and are resistant to most chemicals. They should not, however, be considered the answer to all textile plant problems. Travelers imbed themselves in plastic wheels, shortening the life span and at the same time causing some floor damage. As far as has been determined, there is no universal answer to the question of the proper surface material for a textile mill caster.

Cast steel wheels are designed mostly for carrying heavy loads, but they will tend to groove concrete floors and will chip away at existing cracks. A good possible alternative to steel for heavy loads on concrete is the plastic wheel. This also will wear concrete floors, but not as readily as steel.

A rather expensive means of protecting concrete floors is a glazing process which smooths out pit marks. This protects the floors, because it eliminates the imperfections which the wheels tend to exaggerate.

Plant managers should be cautioned that any rubber wheel will develop a flat spot when used on storage vehicles for heavy loads for protracted periods of time. Heavy draw bar pull is then required.

There is one universal truth in connection with textile plant casters. They must have thread guards. Caster thread guards were an early development of the caster industry to prevent threads and fibers from entering into the working parts. A caster without thread guards would not operate for more than a week in the average mill.

Report on fiber testing in Japan

by a Japanese mill man Exclusive

■ AT THE end of last September, the number of instruments available in Japan for fiber testing were as follows:

Instrument	In Cotton Mills	Total
Micronaire	87	107
Pressley	30	35
Fibrograph	50	55
Shirley Analyzer	13	14
Cotton Colorimeter	5	7
Stelometer	1	1

The instruments not in cotton mills are in use by woolen mills, cotton merchants, shippers, and testing organizations.

The above figures show that more than 70 per cent of Japanese mills have at least a Micronaire for fiber testing. Some of the mills are now buying cotton by Micronaire specifications; others, while not buying by specification, make a bale-by-bale check of incoming shipments, and segregate and use cotton according to fineness as determined by the Micronaire.

Some Japanese mills have a technician test a "representative" sample of the cotton—say 10 per cent of the bales—when it arrives at the port, and inform the mill of the result before transshipment.

Others make complete tests—fineness, length, strength, color, and nonlint content—before the cotton is shipped to the mill.

It is estimated that more than 200,000 bales of cotton were purchased in Japan last year by Micronaire specification.

For mills without testing equipment, there are available the facilities of the Japan Spinners Inspecting Foundation.

The JSIF is the central organization in Japan for the testing of cotton from the fiber to the finished product. Its up-to-the-minute facilities are available to all Japanese mills on a fee basis, although it is used more by the smaller mills.

JSIF is now setting up a plant for small-scale spinning tests.

One American cotton shipper has a fiber-testing laboratory in Japan.

Cottons which can now be purchased on fiber property specifications include American, Mexican, and, to a certain extent, Brazilian.

Cotton classing lights are not yet in extensive use in Japan.

Textiles can profit from the know-how of other industries

"We need more specialized research...."

by C. H. Williams
President
Swift Manufacturing Co.
Columbus, Ga.

Exclusive

TEXTILE processing is one of the oldest mechanized industries, but in the twentieth century we have not kept pace with other industries in machinery refinement. We are inclined to stick to what we have, both in processing methods and machinery applications as we understand them.

I believe that the textile industry possesses as much inventive talent as any other industry, but too often new ideas fail in the beginning because we do not have the mechanical know-how of more modern industries.

To illustrate the value of specialized research, in 1948 I developed here at Swift what I believed to be the first adjustable saddle with oil-impregnated hardwood for contact with the solid arbor top rolls, on which a limited patent was issued in 1950.

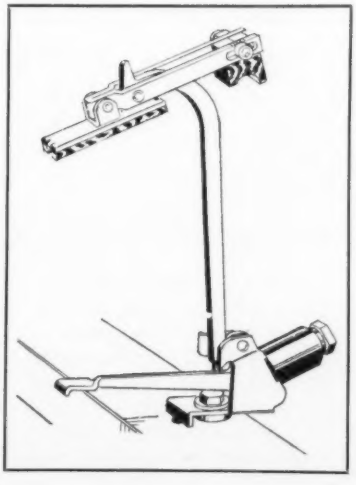
It has been successfully used by us and by a number of other mills. The principles have been widely adopted by other manufacturers, all of whom have followed more or less conventional designs, although they may have refined the castings, stampings, etc., or used a different material for the roll contacts.

Now I will admit my original saddle was crude as to flimsy fits, exposed threads, and general appearance, but it was the best I could do with the engineering and manufacturing facilities available to me at that time. My competition did very little better.

More than a year ago, still believing in dry spinning and more accurate weighting, I turned the patent and other data over to Cole Engineering Corp. for study.

In a reasonably short time they returned with samples that departed from conventional designs. These people were not interested in how I had designed my original saddle or how anyone else had designed a saddle. They were interested only in the principles involved and my objectives: what I wanted it to do and what I did not want it to do. "Boiled down," they said, "what you seek is a weighting device that can be accurately adjusted to provide the proper ratio of weight on the respective top rolls, regardless of roll spreads, and you also want the roll contacts to be of a material requiring no surface lubrication. You don't want any exposed threads or other exposed surfaces that will attract lint, and you want it at reasonable cost." That was it.

This adjustable, self-lubricating saddle was developed by a mill man and refined by an engineering firm with experience in several industries other than textiles.



The saddle which they designed met with our complete approval; however, it was pointed out that the job was only half done. While accurate distribution of weight to the respective lines is important, it is equally important that accurate and uniform weight be applied to all the stirrups of a frame. Such over-all weighting should be adjustable by means other than filing the fulcrum points on the levers, replacing the levers or adding and deducting weights, none of which can be accurately done.

They asked for and received my opinion on spring weighting, which, based upon past experience, was not favorable. This they promptly disregarded, and together we worked out a formula for spring weighting to produce the desired results, and at the same time overcome the objections.

On the first installation, which was on dual-apron long draft, break strength was improved, and nonuniformity was reduced to a consistent 15 to 16 points (Uster tester), compared to a previous average above 19. Ends down were also materially reduced.

I say that this industry, both machinery manufacturers and mills, can use more specialized research by men who know how problems are solved in other industries, and I think that the example I have given is a clear case in point.

Draft proportionment

For medium- and long-staple cottons on long-draft roving systems

by James R. Corley and Jack Simpson
Southern Regional Research Laboratory
New Orleans, La.
Exclusive

THIS PAPER reports the last phase of a study on draft proportionment conducted at the Southern Regional Research Laboratory and is concerned with the mechanics of drafting at the roving frames. The first phase (1)[2] involved drafting on the 8″ x 4″ Whitin Super-Draft[3] using 1-5/16″ fine-fibered cotton; another phase (2) dealt with the 10″x 5″ Whitin Inter-Draft, 8″x 4″ Whitin Super-Draft, and the 8″x 4″ Saco-Lowell FS-2 roving systems in the processing of 31/32″ coarse fibered cotton.

Since these studies were initiated, two other draft distribution studies have been reported. One of these, a study (3) of the effect of draft distribution on a four-roll drawing frame, showed that the most uniform sliver was produced when a tension draft of approximately one was used in the middle zone. This study also showed that with a total draft of six, and constant roll weighting, the most uniform sliver was produced using back drafts between 1.50 and 2.00, but increases in back drafts above 2.2 resulted in rapid decreases in sliver uniformity. The other, a study (4) of draft proportionment on the Saco-Lowell J-3 drafting system showed that the most uniform roving was produced when an 11½ grain per yard sliver was used in the forming zone.

The object of this study was to develop draft guides that more adequately determine the distribution of the component drafts on three long-draft roving systems, for the purpose of producing more even roving when processing medium- and long-staple cotton. Major effort in this study was devoted to the development of equations which would accomplish this objective. The formulas were developed and evaluated on the basis of tests made on selected yarns and rovings, and these results were compared with those from conventional draft guides.

Roving Drafting Systems and Cottons Investigated. This concluding phase of the draft proportionment studies includes the three long-draft roving systems and range of hank rovings shown in **Table I** and the processing of four varieties of cotton, whose essential physical properties are shown in **Table II.** These cottons are designated as medium- or long-staple, according to length, as listed in **Table III.**

Test Methods and Procedures. The Saco-Lowell Sliver Tester, converted to electrical recording (5), was used to obtain data on sliver variation. Uniformity data

[1]One of the laboratories of the Southern Utilization Research Branch, Agricultural Research Service, U. S. Department of Agriculture.

[2]Numbers in parentheses refer to literature references at the end of this article.

[3]Mention of trade names does not imply their endorsement by the Department of Agriculture over similar products not mentioned.

TABLE I. Roving Drafting Systems Investigated and Range of Rovings Processed

Type Drafting System	Size Bobbin	Roving Range
Whitin Inter-Draft	10″ x 5″	.40 to 2.00 HR
Whitin Super-Draft	8″ x 4″	2.00 to 6.00 HR
Saco-Lowell FS-2	8″ x 4″	2.00 to 6.00 HR

TABLE II. Cotton Varieties and Properties

Sample Identification	Classer's Evaluation		Fibrograph Measurements			Micronaire Fineness[1]	Str.[2] lb/mg	Maturity[3]
	Length	Grade	U.H.M.	Mean	Uniformity Ratio			
	Inches		Inches	Inches	Per Cent		Index	Per Cent
Stoneville 2B	1 3/32	M	1.12	.94	84	3.9	8.2	84
Wilds 13	1 1/4	SM	1.20	.91	75	3.7	8.1	86
Sealand	1 11/32	SGM+	1.21	.99	76	3.5	8.0	76
Bobshaw	1 1/16	SM	1.06	.88	83	5.05	8.1	92

[1]Curvilinear scale [2]Pressley index [3]NaOH method

TABLE III. Classification and Staple Range

Classification	Staple Range
Short	⅞ through 1 inch
Medium	1 1/32 through 1⅛ inch
Long	1 5/32 through 1½ inch

are based on the average coefficient of variation calculated from twenty samples of one yard each, with measurements made every inch within the yard sample (6).

The evenness of the rovings and yarns was measured in terms of per cent mean deviation with the Uster Yarn Evenness Tester equipped with a linear type integrator. For roving, a sample length of five yards was measured at a material speed of two yards per minute and a total of 24 samples were used for each test. For yarn, a 20-yard sample length was measured at a material speed of eight yards per minute and a total of 12 samples was used for each test.

Tests for yarn number and skein strength were made in accordance with specifications of the American Society for Testing Materials (1). Single strand strength determinations were made on the automatic Uster Single Strand Tester. Twenty breaks were made from each of ten bobbins (i.e. 200 breaks for each test), with a 20-inch gauge length and a constant rate of loading with a 20-second constant time breaking interval.

For this study the proper zone drafts were developed by the same procedure as used in the previous work (2). Also the effect of four variables (total draft, weight sliver, fiber fineness, and staple length) on draft distributions was studied.

The rovings studied were produced from second drawing sliver made on a conventional four-roll drawing frame equipped with lever-weighted cushion-type top rolls.

An outline of the type of roving systems, varieties of cotton, weights of sliver, and total drafts

TABLE IV. Cotton Variety, Total Draft, and Weight Sliver Used

Roving Drafting Systems	Cotton Variety	Weight Sliver	Total Draft
10" x 5" Inter-Draft	Stoneville 2B	45	4, 7.3, 10.5
		55	4, 8.8, 12.8
		65	4, 8.8, 12.8
		75	4, 8.8, 12.8
	Sealand	40	4, 7.3, 10.5
		50	4.0, 8.8, 12.8
		60	4.0, 8.8, 15.3
		70	4.0, 7.3, 10.5, 12.8
	Wilds-13	50	7.3, 8.8, 12.8
		65	8.8, 15.3
		70	8.8, 12.8, 15.3
8" x 4" Super-Draft	Stoneville 2B	45	11, 16, 30.2
		55	16, 23, 30.2
		65	16, 23, 30.2
		75	16, 23, 30.2
	Sealand	40	11, 16, 28.8
		45	11, 16, 30.2
		55	16, 30.2
		65	16, 30.2
	Wilds-13	45	11, 20.8, 32.5
		50	12, 20.8, 36
		55	16, 20.8
		65	16, 20.8
		75	20.8, 32.5
8" x 4" FS-2	Stoneville 2B	45	11, 16, 30.2
		55	16, 23, 30.2
		65	16, 23, 30.2
		75	16, 23, 30.2
	Sealand	45	13.8, 21.2
		55	13.8, 21.8
		60	16, 23, 30.2
		70	16, 23, 30.2
	Wilds-13	45	13.8, 21.2
		55	13.8, 21.8
		60	16, 23, 30.2
		70	16, 23, 30.2

Figure 1. Relation between zone draft distribution, total drafts, and weight sliver for the 10" x 5" Inter-Draft roving system, when processing Sealand cotton.

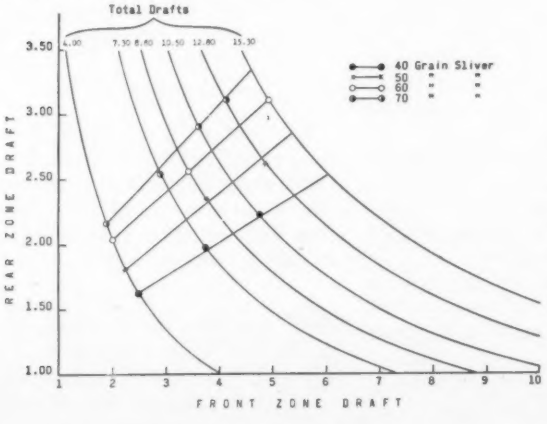
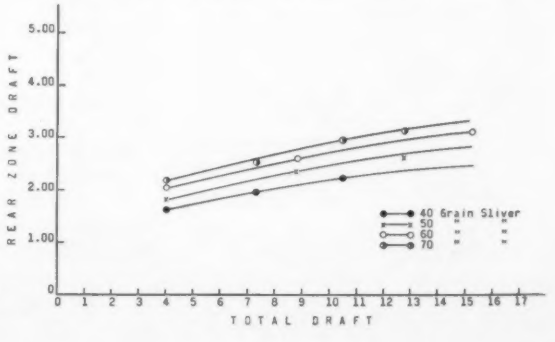


Figure 2. Relation between rear zone draft and total draft to provide maximum roving uniformity on the 10" x 5" Inter-Draft roving system, when processing Sealand cotton.



employed is shown in **Table IV.**

Each total draft shown was divided into a sufficient number of combinations of front and rear zone drafts to determine the combination that produced the most uniform roving.

Discussion of Results. Using the Inter-Draft system and Sealand cotton as an example, a graph of the total drafts used and best combinations of zone drafts for sliver weights of 40, 50, 60, and 70 grains per yard is shown in **Figure 1.**

The points of intersection of the lines representing sliver weights with the total draft curves show the combinations of zone drafts which produced rovings of the best uniformity. Graphs similar to **Figure 1** were plotted for each cotton and long-draft roving system used. Using the data obtained from these graphs, the effect of total draft, weight of sliver fed, and staple length on the distribution of draft between front and rear drafting zones was determined.

As an example, using the Inter-Draft system and Sealand cotton, the relationship between total draft and rear zone draft that gave the most uniform roving for any total draft of which the frame was capable was found in the following manner. The proper rear zone draft, as determined from **Figure 1,** (the points of intersection with total draft of the selected lines) was plotted against the total draft for each weight of sliver as shown in **Figure 2.**

By hypothesis the curves in Figure 2 were parabolic, and represented by the general equation: $Y=KD^n$. A great number of values which were defined by these curves and similar ones which were plotted for Stoneville 2B, Wilds, and Sealand cottons were substituted into this equation. The exponent n was derived by the method of selected points used by Lipka (8). In this case the value of n was found to be close to ⅓. This formula denotes that rear zone draft is directly related to the cube root of the total draft.

$$Y = K_1 D^{1/3} \qquad (1)$$

Where Y = the rear zone draft
D = the total draft
K_1 = a constant

The constant K_1 is governed by the type of cotton and weight of sliver. The exponent ⅓ in equation 1 and the exponents in the following equations are not based on rigid mathematical derivations, but are based on a limited number of points, with each point being selected from extensive empirical data.

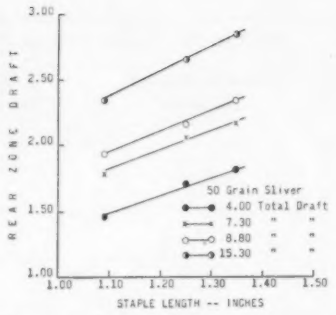


Figure 3. Relation between rear zone draft and weight of sliver to provide maximum roving uniformity on the 10" x 5" Inter-Draft roving system, when processing Sealand cotton.

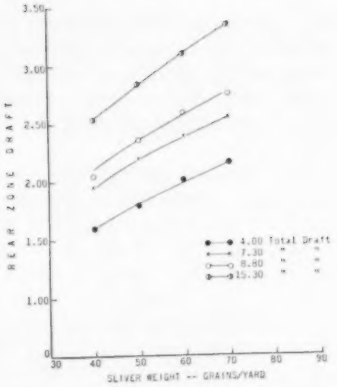


Figure 4. Relation between rear zone draft and staple length to provide maximum roving uniformity on the 10" x 5" Inter-Draft roving system.

To determine the effect of fineness of the cotton on draft distribution two cottons of different fiber finenesses, Sealand and Bobshaw, were selected. Using the cutting technique employed in a previous study (9), the length of both of these cottons was reduced to a common level and processed into 45-, 55-, and 65-grain sliver. Draft distribution tests for several hank rovings of each cotton were run on the 8" x 4" Super-Draft roving system. The data from these tests showed that both cottons required the same draft distribution to produce rovings of maximum uniformity, indicating that fineness does not affect the distribution of draft to any noticeable extent.

To determine the effect of the weight of sliver fed on draft distribution, sliver weight was plotted against rear zone draft for several different total drafts using the Sealand cotton data of **Figure 2** and data from similar graphs for the Wilds and Stoneville cottons. **Figure 3** shows the graph plotted for the Sealand cotton.

The curves formed by plotting this relationship for each cotton used were found to be of the type:

$$Y = K_2 W^{1/3} \qquad (2)$$

Where Y = rear zone draft
W = weight sliver
K_2 = a constant

This formula denotes that rear zone draft is directly related to the square root of the weight sliver.

In **Figure 4** the staple length (in inches) of the three cottons was plotted against rear zone drafts to determine the relationship between staple length and draft distribution. The rear zone drafts for Sealand cottons were obtained from **Figure 2** and the rear zone drafts for Wilds and Stoneville 2B cottons were obtained from similar graphs.

The formula for a straight line gave the best fit to the points and was found to be of the type:

$$Y = K_3 L \qquad (3)$$

Where Y = rear zone draft
K_3 = a constant
L = staple length

The formula showed that back draft varies directly with staple length.

Incorporating the three variables as defined by equations 1, 2, and 3 into one equation gives:

$$Y = K_4 (D)^{1/3} (W)^{1/3} (L) \qquad (4)$$

Where Y = rear zone draft
D = total draft
W = weight of sliver
L = staple length
K_4 = a constant

To solve for K_4, values of Y, D, W, and L from **Figure 2** and from similar graphs for the other cottons were substituted into equation 4. This value was found to be 0.119. The equation

$$Y = 0.119 (D)^{1/3} (W)^{1/3} (L) \qquad (5)$$

then becomes the equation for draft distribution for medium and Inter-Draft system. The following long staple cotton on the 10" x 5"

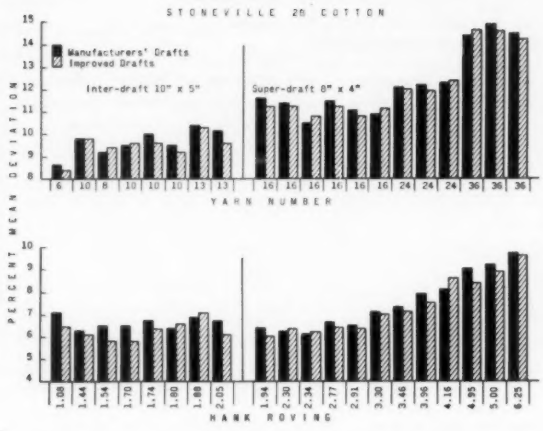


Figure 5. Per cent mean deviations of rovings and yarns processed from Stoneville 2B cotton, using the manufacturers' roving draft guides and the improved draft guides.

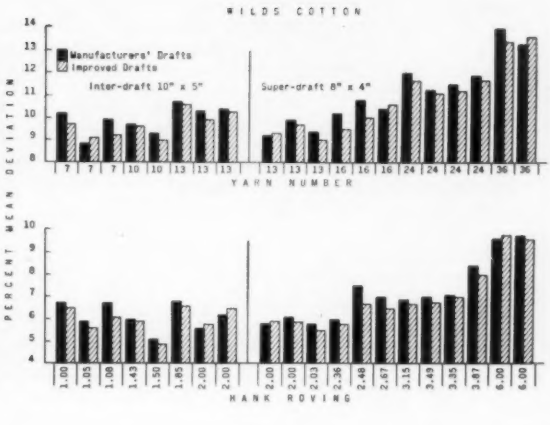


Figure 6. Per cent mean deviations of rovings and yarn processed from Wilds cotton, using the manufacturers' roving draft guides and the improved roving draft guides.

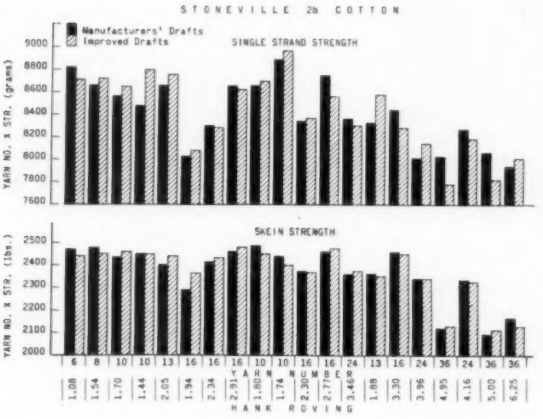


Figure 7. Skein and single strand count-strength products of yarns spun from rovings made from Stoneville 2B cotton, using the manufacturers' draft guides and those spun from rovings using the improved draft guides.

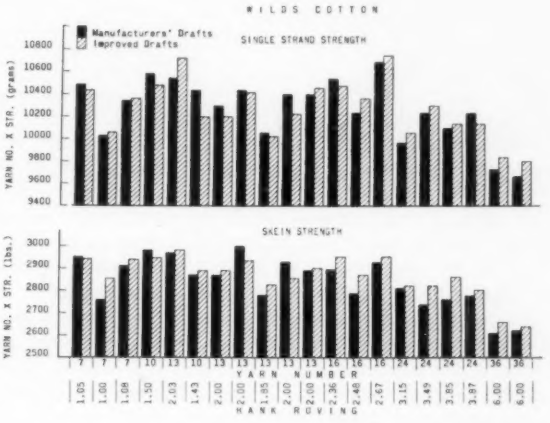


Figure 8. Skein and single strand count-strength products of yarns spun from rovings made from Wilds cotton, using the manufacturers' draft guides and those spun from rovings using the improved draft guides.

equations for the 8″ x 4″ Super-Draft and 8″ x 4″ FS-2 systems were derived by identical methods.

The equation for the 8″ x 4″ Super-Draft is

$$Y = .134\,(D)^{\frac{1}{2}}(W)^{\frac{1}{2}}(L) \qquad (6)$$

and for the 8″ x 4″ FS-2 is

$$Y = 0.120\,(D)^{\frac{1}{2}}(W)^{\frac{1}{2}}(L)^{\frac{1}{2}} \qquad (7)$$

It is observed that for the 8″ x 4″ FS-2 drafting system the rear zone draft varies with staple length to the one-half power. No explanation has been found for this difference in relationship between rear zone draft and staple length, except possibly that such difference is induced by this particular type of drafting system.

Evaluation of Improved Draft Guides. The effectiveness of these formulas as bases for developing improved draft guides was evaluated by comparing the evenness of rovings and yarns manufactured by use of the improved draft guides and the manufacturers' draft guides. A total of 40 comparisons of rovings and yarns produced with the improved versus manufacturers' draft allocations were made for various combinations of draft proportionment of rear zone to total draft. These included selections representing the ranges of draft combinations customarily used on the Inter-Draft and Super-Draft roving systems. In 25 per cent of the cases, there was little difference between the distribution of draft from the manufacturers and the improved guides.

The above comparisons were made on roving ranging in number from 1.00 to 6.25 processed on the 10″ x 5″ Inter-Draft and the 8″ x 4″ Super-Draft from Stoneville 2B and Wilds cottons. Yarns ranging from 6/1 to 36/1 were then spun from each set of rovings (double creel) using identical spindles, roll settings, and drafts.

The per cent mean deviations of rovings and yarns produced from the Stoneville 2B cotton are shown in **Figure 5** and those produced

TABLE V. Differences in Qualities of Rovings and Yarns Processed with the Manufacturers' and Improved Draft Guides

	Total Number of Comparisons	Number of Differences Favoring Mfrs'. Guide		Number of Differences Favoring Improved Guide	
		Total	Significant	Total	Significant
Differences in Per Cent Mean Deviations or Coefficients of Variation					
Roving (% Mean Dev.)	40	9	2	31	9
Yarn (% Mean Dev.)	40	14	0	26	1
Skein Strength (% C.V.)	40	15	0	25	10
Single Strand Strength (% C.V.)	40	15	0	25	2
Differences in Means					
Skein Strength (CSP)	40	15	2	25	9
Single Strand Strength (CSP)	40	18	9	22	14

from the Wilds 13 cotton in **Figure 6.**

Similar evaluations of rovings made on the FS-2 system using the improved draft guides were impossible because no manufacturers' draft guides were available.

Single yarns produced from these two sets of 40 rovings were also tested for single strand strength, skein strength, and yarn number. The strengths of the various yarn numbers spun from the Stoneville 2B and Wilds 13 cottons in terms of single strand and skein strength are shown in **Figures 7** and **8.**

The graphs in **Figures 5** to **8** show only the absolute differences in per cent mean deviations and count strength products between products processed with the manufacturers' draft guides and the improved draft guides. It was noted that, in general, the greater the amount of improvement observed in roving and yarn properties, the greater was the difference between zone drafts of the manufacturers' and improved draft guides. It was evident that, while some of the differences which favored the improved guides were significant others were not significant. As previously noted, in 25 per cent of the cases there was little difference between the distribution of draft in the manufacturers' and the improved guides. It is pertinent to note that the yarns were spun from double creel roving. If they had been spun from single creel, it is possible that a larger number of the differences favoring the improved draft guides would have been significant.

Subsequently, statistical analyses were made to determine if the differences shown by the comparisons were significant. A summary of these analyses is shown in **Table V.**

The data in **Table V** show the following:

Mean deviation of the rovings: 22½ per cent of the differences favored the manufacturers' guides and 77½ per cent the improved draft guides; of these only 5 per cent significantly favored the manufacturers' draft allocations and 22½ per cent the improved draft allocations.

Mean deviation of the yarns: 35 per cent of the differences favored the manufacturers' guides and 65 per cent the improved guides; of these differences only 2½ per cent significantly favored the improved draft allocations and the remaining 97½ per cent were not significantly different.

Coefficients of variation of skein strength of yarns: 37½ per cent favored the manufacturers' draft allocations and 62½ per cent the improved draft allocations; however, only 25 per cent significantly favored the improved draft allocations and the remaining 75 per cent were not significantly different.

Coefficients of variation of single strand strength of yarns: 37½ per cent favored the manufacturers' guides and 62½ per cent the improved guides; however, only 5 per cent significantly favored the improved guides and the remaining 95 per cent were not significantly different.

Mean skein strength of the yarns: 37½ per cent favored the manufacturers' guides and 62½ per cent the improved guides; of these, 2 per cent significantly favored the manufacturers' guides and 22½ per cent significantly favored the improved guides. The remaining 75½ per cent were not significantly different.

Means of the single strand strength of yarns: 45 per cent of these favored the manufacturers' guides and 55 per cent the improved guides; of these, 15 per cent significantly favored the manufacturers' guides and 35 percent the improved guides. The remaining 50 per cent were not significantly different.

Summary. Four variables (total draft, fiber fineness, weight sliver, and staple length) were evaluated to develop the proper proportionment of draft on three long-draft roving systems to insure that the unevenness of roving dependent on draft distribution would be held to a minimum. The results of the study revealed that with long-draft systems operating under conventional procedures, the significant factors which affect draft proportionment are: (a) total draft, (b) weight of sliver fed, and (c) staple length of cotton. Fiber fineness was found not to affect the distribution of zone drafts to any noticeable extent and hence was not used in developing the formulas.

Formulas based on these relationships were developed for calculating draft proportionment on each of the three long-draft roving systems used in the study. The formulas are presented as a means of improving roving and yarn uniformity through better proportionment of zone drafts in the roving process. In general, the greater the

difference between the improved and the manufacturers' distribution of zone draft, the greater was the amount of improvement observed in roving and yarn properties.

Easy to use nomographs have been constructed for the three equations 5, 6, and 7, and are available without charge from the Southern Regional Research Laboratory, 1100 Robert E. Lee Boulevard, New Orleans 19, Louisiana.

Acknowledgment

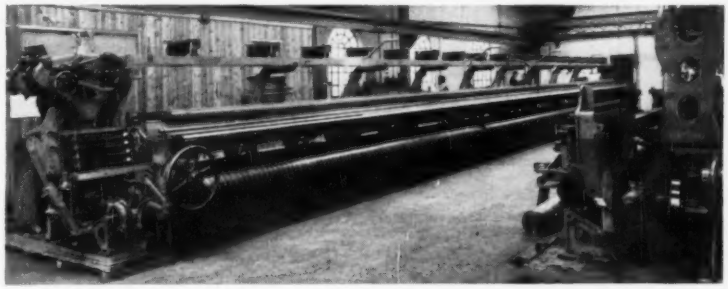
The authors wish to express their appreciation to the personnel of the Analytical, Physical-Chemical, and Physics Section for making the yarn tests, and to the Cotton Mechanical Processing Section for processing the rovings and yarns for this work. Special recognition is due H. W. Little, Statistician, Cotton Mechanical Processing Section, for his advice and aid in evaluating the experimental data.

References

1. Corley, J. R., TEXTILE INDUSTRIES 113, No. 3, 110-113, 223, (March 1949).
2. Corley, J. R., and Simpson, J., TEXTILE INDUSTRIES 116, No. 12, 125-131 (December 1952).
3. Dakin, G., Foster, G.A.R., and Locke, J., *Shirley Institute Memoirs* 26, No. 9, 103-138 (1952-53).
4. Hendricks, T. A., TEXTILE INDUSTRIES 118, No. 5, 119-121, 123, (May 1954).
5. Rusca, R. A., *Textile Research J.* 20, 780-786 (1950).
6. Simpson, J., Landstreet, C. B., and Corley, J. R., *Textile Research J.* 22, 42-48 (1952).
7. American Society for Testing Materials, Committee D-13, "ASTM Standards on Textile Materials," ASTM Designation D 180-54T. Philadelphia: ASTM, 1955.
8. Lipka, J., "Graphical and Mechanical Computation," 128-131. New York: John Wiley & Sons, 1918.
9. Fiori, L. A., and Brown, J. J., *Textile Research J.* 21. 750-757 (1951).

Here's a loom that's 75 feet wide

■ The loom in the accompanying photograph has an over-all width of 75 feet and a reed space of 65 feet. Designed by Bergedorfer Eisenwerk A-G, of Hamburg-Bergedorf, Germany, for the manufacture of papermaker's felt and similar endless fabrics, it is the widest loom built in Europe since before World War II.



The loom is 7 feet high, 8 feet deep, and is driven by a special 20-hp motor. Four shuttle boxes at each end permit the use of 7 shuttles, each of which weighs about 8.8 pounds and is about 27½ inches long. The average speed of the loom is 20 picks per minute.

Total weight of the loom is about 66,000 pounds. Because of the high density of the fabrics woven, the lay is designed to withstand a pressure of from ½ to 1¼ tons per foot.

Because the loom arch and other parts had to be made in one piece, a special truck was required to deliver it to the mill.

Continuous or individual tapes better for woolen carding?

■ MAGEE Carpet Co., Bloomsburg, Pa., recently conducted tests to determine whether continuous or individual tapes on the condensers of woolen cards gave the best relative evenness of roving and yarn. New tapes were used, in consecutive tests.

In each test, a given wool blend and grain weight were used, on the same card or cards; production was 100 pounds *of yarn* per hour. Only the tapes were changed — all other adjustments remained the same. A total of 200 spools was evaluated in the tests, on four different cards.

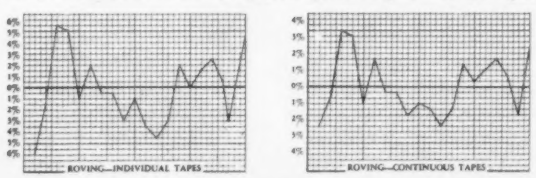
The graphs reproduced in an accompanying illustration indicate, by percentage, the comparative variations in one test involving 20 spools of roving produced from one card. Individual tapes were used in producing 10 spools, and a continuous tape was used in producing the other 10, all on the same card. The graphs show the variation of roving from one end of the spool to the other.

Officials at Magee drew the following conclusions from the series of tests:

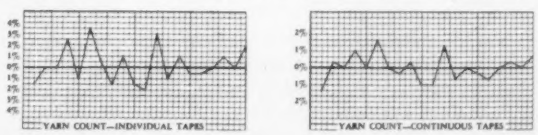
The uniformity of the individual ends across the spool is 42 per cent better, or more uniform, using the continuous tape.

The evenness of the yarn spun from the roving made with the continuous tape shows a 34 per cent improvement.

The base line, 0%, represents the standard grain weight of roving. Percentages above the base line represent grain weights that are heavy; those below the line represent grain weights that are light.



Standard yarn count is represented by the 0% line. Yarn counts above or below this line are heavy or light. Each yarn count plotted corresponds with the roving end in the same relative position.



An engineering approach to infrared drying of coated fabrics

How to select an infrared drying system

Staff prepared
Exclusive

INDUSTRIAL web drying has been approached in pretty much the same way for the last 150 years: The web is either passed over steam heated cylinders or into hot air chambers. These methods require long drying sections and accurate controls.

In the field of coated webs, two sets of heating requirements usually exist:

1. Solvents (including water) must be dried or driven from the web. Temperatures usually cannot exceed 60 per cent of solvent boiling point, at the risk of over-drying and embrittlement.

2. The coating must be cured or fused, for which rather high temperatures are required.

If both of these jobs are done at once, a conflict arises. The cure, for example, might require a temperature of 350 F, in still air; while drying cannot be done at more than 120 F, and is usually accomplished by means of heated moving air.

These are the basic problems peculiar to coated webs. They have recently been solved by an engineering application of infrared radiation. Because of the similarity in response to the method, textile web heating is effectively accomplished by the basic means developed for the paper industry.

REGARDLESS of type of material in process, all web heating problems can be classified either as evaporative drying or curing.

Considering efficiency, evaporative drying of solvents by hot air requires considerable web exposure to activate evaporation, thus explaining considerable drying area requirements. Further, when about 10 per cent residual moisture content is reached, hot air or drum heat tends to insulate this entrapped moisture.

If two types of heating—convection and radiation—are considered, the former is shown to heat any weblike material from the outside in, and the latter directly from within. The most practical form of radiant heating, infrared, was examined with the purpose of including it in standard coating systems.

The following characteristics pertinent to drying problems were isolated:

1. Radiant energy heating depends on conversion of heat to electromagnetic waves by the infrared element and these waves are absorbed by atoms of the material being dried, creating heat from the inside.

2. These electromagnetic waves exist in a variety of wave lengths. Different materials will absorb these waves at different rates, and different wave lengths will have different heating effects.

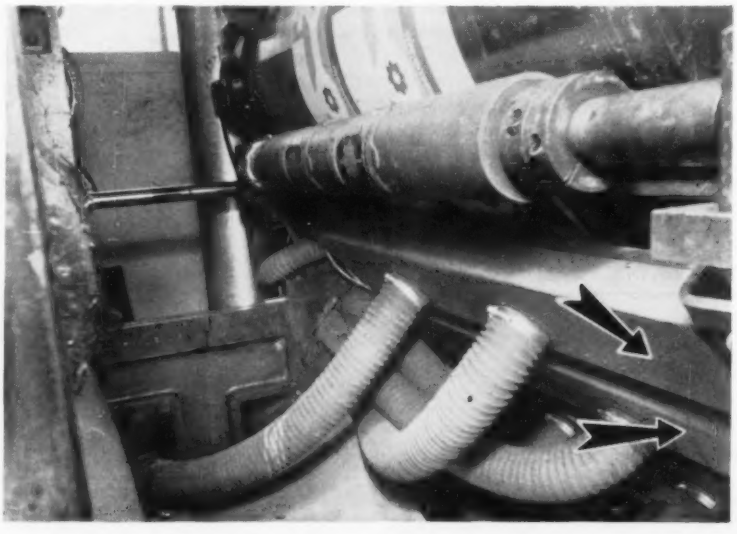
3. Short electromagnetic waves (maximum 1.3 microns), such as are emitted from the common infrared bulb, will penetrate most webs and offer little heating value. Further, color influences them.

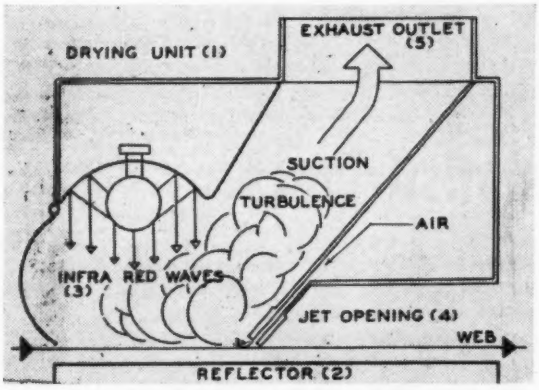
4. Longer waves (upward of 3.0 microns), however, are insensitive to color, and will be absorbed efficiently in the top layer of a web.

5. By using elements emitting electromagnetic waves in a band easily absorbed by a specific material, it is possible to transfer up to 72 per cent of the electrical input into heat within the material to be dried. Use of this type of heating is appropriate when the moisture to be dried is embedded in the web; if moisture is on the surface of the web and is to be evaporated, a combination of air with the radiant heat needed to remove the evaporated moisture.

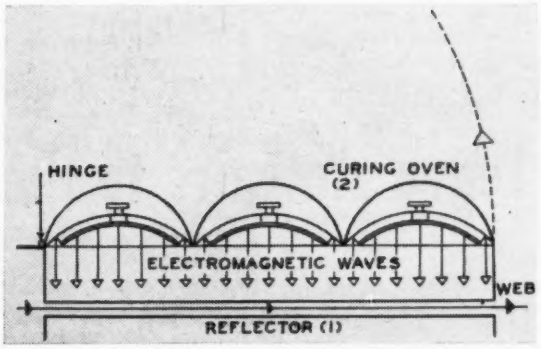
6. Solution of any drying prob-

Two Infra Air Jet units have been installed on this rotogravure press. Drying efficiency allows machine speed increases, eliminates room odors, and reduces high, uncomfortable room temperatures.





Infrared drying, illustrated here schematically, works this way: The web is passed between the drying unit (1) and the reflector (2). It is exposed to infrared waves (3) and heated internally. An air current of 9000 fpm velocity hits the web through the jet opening (4) and blows against the running direction of the web. The layer of saturated fumes which covers the web is exposed to the air current, agitated, and absorbed by the air, then exhausted through outlet (5). A vacuum created behind the jet opening increases speed of evaporation and avoids "skin dryness."



Infrared curing, illustrated here schematically, works this way: The web travels between the reflector (1) and the curing oven (2). The source of radiant energy consists of patented ceramic elements made in six different wave lengths in sizes of 5 and 10 inches. Through choice of the proper element, and because reflectors are directed parallel to the material to be heated, up to 72 per cent of the electrical energy used can be converted to curing heat within the web material.

lem depends on an analysis of these factors; one control common to all is the avoidance of over-drying, to prevent embrittlement.

BASED on these facts, two basic types of infrared units were devised and patented. The Liica system, as the method is called, involves selection of one of six ceramic infrared emitters from units having maximum wave lengths of 2.3, 2.5, 3.7, 4.6, or 5.5 microns—the one best suited in absorptive powers to the material being dried. The ceramic units are then used in conjunction with a circulating air jet if evaporative drying is desired, or in an assembly best suited to preheating or curing in still air.

Both types use reflectors to direct infrared waves. Accompanying illustrations show these two units. Adaptation of the correct heating system to a coated fabric drying operation is currently being designed by Converters Machine Co., Greenwich, Conn. The web referred to in this article was studied originally for specific application in paper converting drying. Wave absorption studies, however, have shown that the same results are available for converting textile webs, particularly those which are cellulose based.

ONE INSTALLATION of the infrared Liica system involved installation of four working "Infra Air Jet" units on a rotogravure printing machine which is 30 inches wide and prints four-color jobs on latex-coated cotton goods for use as washable wallpaper.

Temperatures and air velocity of the units were adjusted so that web velocity could be increased to twice the speed originally run, with accompanying elimination of room odors (solvents) and high room temperatures.

More textiles were finished last year

■ A total of 10,450 million linear yards of cotton, silk, and man-made fiber fabrics was finished during 1955, according to preliminary figures recently released by the Bureau of the Census, U. S. Department of Commerce. This was almost 9 per cent above the 1954 figure.

Yardage of cotton fabrics finished was 9 per cent greater than the amount finished in 1954, and silk and man-made goods were up 8 per cent over last year's total.

In the finishing of cotton goods, South Carolina ranked first with 29 per cent of the total. North Carolina and Massachusetts followed with 15 per cent and 14 per cent, respectively.

New Jersey accounted for over 39 per cent of the silk and man-made fiber goods finished.

Cotton, Silk, and Man-Made Fiber Broad Woven Goods Finished, Summary by Type of Fabric and Finish

Type of goods	Production (thousands of linear yards) 1955	1954
Bleached, dyed, or printed goods, total	10,449,562	9,594,351
Cotton	8,098,325	7,407,348
Man-made fiber fabrics and silk	2,351,237	2,187,003
Bleached and white finished goods, total	3,691,464	3,389,791
Cotton	3,367,839	3,179,589
Man-made fiber fabrics and silk	323,625	210,202
Plain dyed and finished goods, total	4,251,813	3,967,554
Cotton	2,595,750	2,308,304
Man-made fiber fabrics and silk	1,656,063	1,659,250
Printed and finished goods, total	2,506,285	2,237,006
Cotton	2,134,736	1,919,455
Man-made fiber fabrics and silk	371,549	317,551

Quality . . . Sampling . . . Testing

Leave statistics to the statisticians!

by John Duerst
Exclusive

RECENTLY this writer came across an old bobbin of yarn of foreign origin. A comparison of this old foreign yarn with yarn of the same number and staple length produced with modern machinery here reveals that the old foreign yarn is the evener of the two. It is to be mentioned that the old foreign yarn was made in pre-statistical days, when the supervisor of production was responsible for turning out an even product without the benefit of statistical knowledge.

Why, we will counter, does our modern operation not turn out a yarn of still superior evenness? Do we not have all the new statistical knowledge to make this possible? We have modern testing machinery and statistics on the product of every machine in the mill. We take one look at a modern chart and can spot at a glance which machine has registered out of bounds.

A Chart Is Already History. This is all very enlightening, to be sure. But the fact that a chart has been made testifies that the irregularity of performance has already happened, maybe yesterday. And it is my experience that in eight out of ten cases by the time the foreman is notified of an irregularity in the charts he may find everything at the machine in good order with no sign of disturbance. However, a watchful operative or supervisor probably could have spotted the trouble while it was happening and thus prevented the damage. But as often happens, hundreds of pounds of product may have passed through the irregular setup before being spotted by the chart maker. Thus if the supervisor waits for the charts to find out where something was wrong, or is wrong, great quantities of irregular products may go through.

Charts Can't Replace Close Supervision. Generally, fluctuations are simply the effects of preceding fluctuations, such as single or double ends and other variations. Here again we have to fall back on supervision and the employees. Mechanical defects and improper feeding practices must be spotted by supervisors, fixers, and operatives before much damage is done. And this rule seems to prevail whether a mill that is turning out even yarn has statistical procedure or not.

As a whole, statistical charts are of more value to point out misdoings of supervisors, fixers, and operatives than actual machinery troubles. The simple answer is properly trained supervisors, fixers, and operatives with an eye on prevention rather than adjusting and fixing after damages are done.

The Proper Use of Statistical Procedures. There is no denying the fact that spinning mills of the past have turned out an evener yarn than is the case now. Why then has it become necessary to apply statistical procedure, which after all just points out damages already done and sometimes sends us on wild goose chases to hunt up the reasons; only to find that the situation has remedied itself and would not have happened if proper processing methods were kept up for quality?

It is of course a fact that the economic trend was to reduce doublings all the way from first drawing through spinning. The reduction in doubling as such at any point will not be as damaging to final evenness as the resulting magnification of a faulty process. An end dropped on a drawing frame shows up as a greater fluctuation when there are only two drawing processes as against the former three drawing processes. A "slight" difference in drawing sliver due to a single or double, when only one drawing process is used, shows up in far greater proportion in a yarn drafted thirty to forty times its original length.

The supervisor must be more on the alert to prevent fluctuations. Statistical charts will point out the faults but will not cure them. How then, in addition to more doubling, did the former supervisors turn out a more even yarn? The supervisor formerly watched excessive range in sizings all along the line. By watching the sizings closely why should we not get a still better yarn today?

Instead of the help possible through the statistical methods that have been introduced we have in many instances gotten the impression that statistical charts would be the cure-all. Supervisors, instead of using their former skill in judging the production by their own frequent sizings, have become dependent on statistical procedures and results. To the supervisor this getting up of the figures has indeed not only been an extra job but has tended to confuse the matter. Why should a practical supervisor be burdened with the calculation of the coefficient of variation when he well knows from experience that the ranges in sizings are either too large or small enough to be correct? Thus in addition to doing his outlined job of watching the sizing ranges he must learn a new statistical conception.

Furthermore, why make charts of anything that is run on correct ranges? Make charts only of continuing out-of-range performances and then only to diagnose and correct their causes that cannot otherwise be located! It will be an easy

matter to pick out off-standard culprits to report to the Statistical Department, which will make the necessary calculations and suggestions. Why calculate and recalculate the sizings for three hundred days a year and find out that only a very small percentage has actually gone overboard?

The Where and When of Size Checks. Where is continued sizing necessary? Picker laps should be closely guarded and should be within proper weights. An occasional outlaw, say one in a hundred, if not too much over or under weight should not be rejected. Cards turn out what is fed to them. But stripping is liable to introduce variation. Proper doubling later on is supposed to even out this and other faults. Hence only occasional sizing is recommended simply to maintain sliver weight per unit length.

Once there are standard gears for standard weights, lappers should need no changes; and only an occasional sizing will be necessary. Combers are the same as lappers in that no close routine sizing is necessary.

Breaker drawing needs only occasional checks. Finisher drawing, however, should constitute the pivot sizing control point in the mill. Finisher drawing sizing should fall within given standard ranges; and, if over or under, should be rechecked so that the supervisor may be sure before actually ordering a change of gears. Finisher drawing sizings should be taken frequently at prescribed times, about twice per shift.

Roving frames of all kinds should never need to be changed as to weight unless for some reason a lighter or heavier number is desired. Good supervision here consists of watching tension, lay, and twist. Over-stretched roving will ruin a spinning room. All spinning frames should be sized frequently. If the average counts of all frames on a given count is over or below standard the whole block should be changed simultaneously.

Full statistical knowledge, calculations of standard deviation, coefficient of variation, and other applications should be for the Research and Statistical Quality Departments only. Once the settings, system of manufacture, and methods are clearly outlined and followed up through adequate supervision, any mill ought to be able to hold to the standards specified. Deviations from these standards can easily be detected. In such cases proper investigation, including all known and necessary statistical knowledge, should be applied to the faulty process or setting.

There are few mills which have reduced their mill sizing schedules. Indeed, the present day statistical procedure is based on mill sizings. Thus actually all the supervisor should be required to know is: (1) which process needs sizing, (2) how many samples to a sizing group, and (3) standard sizings and ranges.

Conclusions. My conclusions are:

(1) The foreman must know what processes to size and how often. (2) He must know the standard sizings as well as the standard ranges of the various numbers in the various processes. (3) He should watch closely the ranges of the sensitive processes and report off-standard sizings to the statistician. (4) The foreman must know what processes are susceptible to change and when to change them. (5) The Research and Statistical Departments should make thorough tests, statistical and otherwise, of any processes reported off base as well as of new layouts and settings that are being tried out.

Periodic off-sizing results should be charted in an all-around comprehensible way. The bulk of tests within standards should not be charted and calculated, for otherwise by the end of the year there will be hundreds of thousands of them, mostly useless.

A policy on fabric quality and informative labeling

■ THE following 10-point program for the textile industry to follow on fabric quality and informative labeling was set down by J. A. Dixon, assistant general sales manager of Courtaulds (Canada) Ltd., and president of the Textile Technical Federation of Canada, at a recent meeting in Gothenburg, Sweden:

1. Elimination of all forms of misrepresentation, even if these are apparently insignificant as regards fabric performance.

2. Accurate fiber identification, if not by percentage, then by order of quantity in the blend.

3. Recognition and support of brand names where something of the integrity of the mill or manufacturer is known.

4. Support for governments trying to set up nonmandatory methods of establishing standards for certain staple cloths.

5. Re-establishment, where possible, of quality control plans sponsored by fiber manufacturers, such as the Courtaulds (Canada) "Quality Control Plan," or the American Viscose Corp.'s current "Avisco Integrity Plan."

6. Support from garment manufacturers and retailers in plans for informative labeling, remembering that the garment as a whole must perform in accordance with the instructions, and not merely have the label based on the principal fabric in that garment,

7. Recognition of the importance of the following cloth characteristics: fabric stability, color fastness, crease resistance, and ironing behavior.

8. Elimination of all extravagant claims of the "miracle fabric" nature, and for the drip 'n' dry and wash 'n' wear category.

9. Assurance that the cutting of costs in the manufacture of textiles is carried out only by increase in efficiency and not by skimping on material or processes.

10. Continued effort to make better and more interesting textiles.

Chairman Fife

Murdock—Maintenance

Malone—Weaving

Williams—Slashing

Textile Operating Executives of Georgia discussed

Plastic shuttle performance

Staff Report

MILL MEN from Georgia, Alabama, South Carolina, and Tennessee converged some 300 strong on the A. French Textile School at the Georgia Institute of Technology, Atlanta, on October 13 to attend the annual fall meeting of the Textile Operating Executives of Georgia. On the agenda were discussions on weaving, slashing, and maintenance.

General Chairman *J. A. Fife,* Scottdale Mills, Scottdale, Georgia, opened the meeting. *George Malone,* Exposition Cotton Mills, Atlanta, Georgia, led the discussion on weaving.

Lloyd Williams, Thomaston Mills, Thomaston, Georgia, led the discussion on slashing. *S. E. Murdock,* Eagle and Phenix Division, Reeves Bros., Inc., Columbus, Georgia, led the discussion on maintenance.

In the elections held after the discussions, *McAllister Isaacs, Jr.,* Bibb Mfg. Co., Columbus, Ga., was elected to the office of general chairman, succeeding J. A. Fife.

Clyde C. Cobb, Riegel Textile Corp., Trion, Ga., was elected to the position of vice-general chairman.

Herman A. Dickert, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., was reelected to the position of secretary-treasurer.

S. E. Murdock, Eagle and Phenix Division, Columbus, Ga., was reelected to succeed himself on the executive committee.

Lee Wynn, Canton Cotton Mills, Canton, Ga., was elected to fill the unexpired term of *Clyde Cobb* on the committee.

For holding the lucky registration cards, each of the following won a new hat:

Richard B. Pressly, McGraw-Hill Publishing Co.; *Walter Carr, Jr.,* Bibb Mfg. Co., Columbus, Ga.; *R. L. Horsley,* Pepperell Mfg. Co., Lindale, Ga.; and *Walter Croft,* West Point Mfg. Co., West Point, Ga.

Plastic Shuttles. Of the 11 plants involved in the discussion on the merits of molded plastic or plastic covered shuttles three either had no experience to report or had not reached a conclusion.

The remaining mills were enthusiastic in their responses. The plastic shuttles are more expensive than are the conventional ones of dogwood, but the running times appear to offset the original cost easily.

The only shuttle mortality reported was caused from bobbin hanging, etc. *Mill L* has logged in excess of 3300 hours on a group of molded shuttles and reports that the shuttles show very little wear.

Mill E had some difficulty in adjusting looms to the increased shuttle weight. This was overcome by setting the pick and stroke alike on all looms and removing some of the power.

Mill S has approximately 1400 looms running on the bonded and plastic covered shuttles and reports an indicated life of four times that of conventional ones. The plant reported that they appear to run hotter and harden the box leather; some difficulty has been experienced in keeping the bristles in place.

When asked if picker life was shortened by the new shuttles, the spokesman for this plant replied, "We have not evaluated that yet."

Loop Selvages. Eight mills replied to the question, "On looms running loop selvages, do you have excessive breakage after a week-end stop?" Six plants replied in the negative. Two reported having such troubles.

Both mills having Monday morning wire breakage have re-

duced the humidity over those looms prior to the start-up in an effort to reduce the breakage.

Mill I, which does not have trouble of that nature, levels the harnesses when the looms are stopped for the weekend, and conditions the room for eight hours prior to Monday morning. This statement was not advanced as a corrective measure, however.

Three mills prefer nylon monofilament in place of wire to form the selvage loops; four prefer wire, and one reports no experience with nylon. The obvious advantages in using nylon are in the reduced hazards to employee safety (no more broken wires getting to the cloth room) and in the lack of rust.

One participant pointed out that coated wire is available which reduces the rust problem.

Link-type Parallel. This attachment is still in the testing stage among the mills replying. Three plants are using at least one of them, and tentative conclusions are favorable.

Two plants reserved judgement until trials are completed. *Mill A* reports that the unit improves shuttle boxing and paralleling of pickers.

Take-up Motions. The conditions leading to big-ended and telescoping cloth rolls are summarized in general in the reply made by *Mill J:*

Worn take-up roll fillet

Take-up roll too high or too low on one end

Cloth roll not properly lined up to contact the take-up roll

Rack and rack gear choked to the extent that it will not roll down

If using a double spring system, a weak spring

On the subject of center wind-up spring versus double wind-up springs, the mills were exactly divided. Seven preferred single springs; seven preferred double springs. Two plants indicated that either system is acceptable; and one plant preferred the single spring for cloth widths up to 50" — above that, double springs.

Tying-in Machines. The eight plants which reported their experiences with portable tying-in machines which tie the warp at one loading stood solidly behind the system. *Mill B,* because of a crowded weave room, adopted the system requiring several loadings.

The advantages reported are as follows:

Less moving of heavy warps and patterns

Warps tied straighter

Better reed alignment

Less loom down time

Lower labor cost

Longer life of reeds, harnesses, and shuttles

Mill S at first experienced difficulties in the presence of doublings. This trouble disappeared however after a change in warp preparation was made, and as the operatives learned to control machine tension.

The plant ties all warps with a beam diameter of 26" or greater on the portable machines; others are tied on the stationary machine. An increase in tying-in costs was noted, but the increased quality of the warps tied with the portable units partially offset the increase in cost. Loom down time has decreased.

One participant pointed out that the lack of inventory of tied patterns left the plant at the mercy of an excessive warp fall out. His plant ties all warps of 32" diameter (44" looms) on the portable machine. Beams of 22" heads are transported to the stationary machines.

It developed that the several mills have met this problem, each in its own way. Some plants have crews of specialists who take over the loom as the warp runs out, and then do all the work necessary to get the loom back into production at the earliest possible moment. Some mills have the smash hands pull over the tied warps; others have the fixers do it.

One solution submitted to the problem of heavy warp fall is the utilization of extra racks which are kept prepared ahead of the knotter.

Shuttle Fur or Bristles. When asked to evaluate their experiences with nylon loops in lieu of fur or bristles, 15 mills replied. Of those 15, *Mills A* and *J* are still conducting experiments. Seven mills report satisfactory performance; six report unsatisfactory performance.

The mills also were asked to give the size nylon used, the manner of installing it, the increase in package sizes if any, to discuss operating experiences (advantages and disadvantages), and to give the extent to which the nylon was in use at the time of the meeting.

A list of advantages reported by the satisfied users is compiled below. (Other comments relating to the behavior of the nylon are listed in Table 1 on page 126):

Less kinky filling

Better selvages

Uniform tension

Fewer filling breaks

Less ballooning

The reasons given by the ones reporting dissatisfaction are chiefly that the nylon cracks or splinters badly. Some of those reporting satisfaction were quite frank also in pointing out the disadvantages.

They also talked about
power transmitter-type drives
humidifier maintenance
circuit breakers
nylon loops in shuttles
take-up motions

The report given by *Mill S* can be quoted as a fair summary of all the pros and cons presented on the subject. "Some of the advantages are: (1) saves fixer about two hours a week as he does not have to change [bristles] as often . . .; (2) cheaper; (3) more constant tension bobbin to bobbin, as well as within the bobbin; (4) nylon is always the same — bristles vary with each shipment.

"Some disadvantages are: (1) takes a little longer to put it in; (2) have to train fixers — slight variation in use with different yarn numbers; (3) gets hot and

TABLE I

Experience of Georgia Mills with Nylon Loops in Shuttles

Mill	Conclusions	Nylon Size Gauge (")	Nylon Size Break (lb)	Filling Counts	Increase Package Size?	Use Fur or Bristles With It?	Mill Comment	No. of Looms Involved
A	X					Neither		
" B	US		30		No	Bristles	Frayed & cut filling	
" C	US							
" D	US	.022	20, 30, & 40	15s to 32s	No	Fur	Blistered & Splintered	
" E	US		25 to 50	4s to 35s			Cracked badly	
" G	S	.045 .032		3.00s to 7.50s Finer than 7.50s	No	Neither	Outlasts bristles	All
" J	X				No	Neither	Outlasts bristles	
" K	S	.032		8s to 30s	10% by wt.	Neither	Equal to fur & costs less	
" K-1	S		50 30	5s thru 27s Finer than 27s	No		Lasts longer & easier maintained	1311
" L	S		40	5s to 26s	Yes	Neither	Less upkeep & costs less	400
" M	S		40	105s to 205s Cotton & Rayon	No	Bristles	Lasts longer but burned in some positions	249
" Q	US							
" R	US	.025		4/50/1 & 9s				
" S	S		40	12s to 27s	No	Neither	Lasts longer	1400
" T	S		40 30 25	6s to 14s 15s to 20s 20s to 30s	No	Neither	Lasts longer	Over 1000

Legend: S—Satisfactory, US—Unsatisfactory, X—Experimental only—no conclusions

splits on coarser yarn numbers; [and] (4) weavers have to be careful in handling shuttle when filling breaks to keep from pulling out the loop."

In the discussion on the actual placement of the loops in the shuttle, there appears to be a slightly different approach used at each mill. However, the pattern generally followed suggests that two holes are drilled for each loop (one hole for each of the two ends) which allows the nylon to angle up from the shuttle wall and rest on the quill.

Some plants measure the distances between the loops; others count the rings on the quill barrel to locate the loop positions. Pegs and glue are used generally to secure the nylon. One plant uses a jig to assist the fixers in locating the holes uniformly.

Three comments from the floor added further light to the subject:

". . . burn the ends projecting from the outside of the shuttle wall after peg is driven home to assist in holding the nylon in the shuttle."

". . . use a tapered drill to help anchor the loop."

". . . either type of filling twist can be run without changing the nylon loop positions."

Loom Drives. Power transmitter type drives were reported satisfactory in seven of the eleven mills answering this question. Two reported definite dissatisfaction; one made no comment because of limited experience. A summary of the advantages given is as follows:

No oil drip from bearings
Fewer loom parts to maintain
More positive starting
More positive braking
Easier to maintain
Easier to adjust
Neater
Uniform speed from fly-wheel effect

Not all of the seven mills reporting satisfaction from the drive lined up solidly in its praise. *Mill A* reported that is was the best drive yet made from the weaver's standpoint, but required excessive maintenance and had interior bearings which were difficult to lubricate. *Mill R* states that the looms equipped with the drive take too much shock when slamming off and consequently experience too much parts breakage.

Several comments from the floor indicate that the drive gear on such drives must be turned away from the pick point periodically to compensate for wear. Wavy patterns in light-sley cloth was one of the defects traceable to such uneven wear. Some mills have a-

dopted schedules for turning the gears.

Pneumafil Starter Switches. Mill D, in installing Pneumafil went from lever-actuated drum switches to push-button switches with "start," "stop," and "jog" control and finds maintenance on the latter type of switch to be excessive.

No other mill among the eight replying has experienced the same difficulty with push button switches. *Mill A* has run the same type of switch for six years without difficulty; *Mill C* reports little, if any, increase in maintenance; and *Mill S* feels that maintenance on the "start-stop" variety to be even less than on the drum type.

Mill T, in replacing the drum type with push button switches without the "jog" position, has eliminated the fires caused by the older type.

Servicing Loom Motors. Most of the eleven mills discussing loom motor overhauling and oiling resort to an "as needed" schedule for overhauling and/or reinsulating loom motors.

Every three years *Mill Q* checks bearings, cleans, dips, and bakes loom motors. *Mill I* cleans and inspects its 175 open-type motors on a yearly schedule. The balance of its motors are totally enclosed and are not cleaned or inspected on a schedule.

Mill B overhauls as needed and oils every three months; *Mill C* reports that no cleaning is necessary, and lubricating is done every three months. Those are the only mills giving a lubrication schedule.

Mill H reports the following procedure: "We try to get over our loom motors in a period of five to six years. The motor is taken down, the windings cleaned thoroughly and the motor is then baked out in an oven to get it thoroughly dry. If the motor leads are bad they are replaced at the same time the motor is cleaned. The stator windings are then dipped, while hot, in a black elastic baking varnish. The stator is then placed back in the oven and baked until the varnish is thoroughly dry. Bearings and shaft are checked and replacement made where necessary.

"One of our problems in this overhauling procedure was the removal of the excess baking varnish from the motor housing after the dipping. We have found a masking compound with which the housing can be painted, before dipping into the insulating varnish, which makes removal very quick and easy after the motor has been baked out."

Humidifier Maintenance. Seventeen plants replied to a query as to how and by which department humidifiers are kept in operation. Eleven of these maintain their systems through their machine shops or maintenance departments. Two plants operate with each department maintaining its own systems with only supporting help from the machine shops.

One plant has placed humidifier maintenance under the jurisdiction of its technical department; another has a special department divorced from its maintenance department for this work — still another uses the pipe and welding shop, which also is responsible for the air conditioning system, for humidifier upkeep.

Most of the replies concerned mechanical upkeep; not enough replies indicated specifically the department responsible for the actual moisture control for a pattern to be drawn.

At *Mill J* the humidification is handled by one man who is assigned to the shop. Once each year he takes down each humidifier, cleans, overhauls, paints, and returns it to operation. He also takes care of all needed repairs between the systematic overhaulings. Each department regulates its own moisture level.

Mill M cleans weekly all individual fan houses, all air outlets, and all louvers. All ducts are cleaned inside every three months. Atomizer heads are cleaned and overhauled once a year, controls are cleaned daily, and all repairs are made as needed. Each humidifier head is wiped every 24 hours.

Air Conditioning. The lead question of this discussion called for mill experience as to the best method of maintaining air conditioning equipment against rust and corrosion. The second question called for an evaluation of the practice of painting rust spots as they occur versus painting the whole fan.

Mill A at present is expecting best results from a plastic coating. Spot painting is in its first year and therefore lacks evaluation.

Mill C cleans and paints the whole fan whenever rust spots appear.

Mill D tries to paint fans and ducts at least once every two years. With this system all departments except the weave room stay in good shape. Here the duct work, fan housing, and hangers deteriorate from year to year regardless of what is done. A submarine primer gives as good a result as any tried to date.

Mill H in six years of effort has found no finish which will hold up satisfactorily. A painting done in 1955 with an asphaltic coating showed best results when inspected a year later. Due to operating schedules which permit only a single week of plant inactivity per year, maintenance is limited to painting the interiors of all fans during the shut-down. No attempt is made to spot paint during the balance of the year.

Mill J, which does not have air conditioning, finds success in cleaning and painting rust spots as they appear on exhaust fans.

Mill M thoroughly cleans and paints fan blades and housings once per year.

Mill N has found no satisfactory remedy for corrosion.

Mill S to date has had no problem of corrosion, but holds to the belief that the entire fan should be painted with a rust preventive.

Mill T paints the whole fan when rust appears.

Circuit Breakers. The mills were called upon to report their experiences pertaining to the interrupting capacities of the circuit breakers in their power substations, and to report if the circuit breakers have the capacity to withstand short circuit conditions in the plant.

In Mill B all branch lines are fixed from the main line, and the main line feeds from circuit breakers at the switch board. The sys-

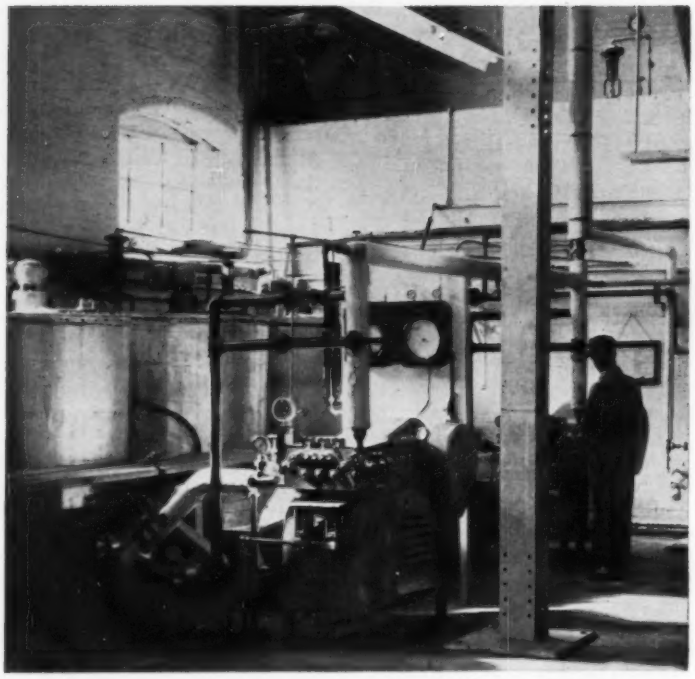
(Continued on page 147)

Warp sizing

*Article 8**
The Sizing Process

The size mix (formulas)
Preparing the mix
Cooking the size
Storage

by Paul V. Seydel, D.Sc.
Seydel-Woolley & Co.
Exclusive



A well-kept size cooking room. Note homogenizers, asbestos-lagged pipes, and control instruments.

IN THIS chapter we shall consider the size mix itself, sizing equipment, controls, and the operation of slashers.

The Size Mix (Formulas). Many books and articles on slashing have made what seems to us the fundamental error of listing suggested formulas for sizing. Without a ouija board, or a crystal ball that had won the last ten horse races for us, we would hesitate a long time to recommend a formula, sight unseen, to any mill even where we knew some of the conditions.

There are too many variables that must be accounted for before a formula is settled upon: the cotton or rayon staple, how it is spun and how it is to be woven, how uniform it is, what viscosity of starch is used (also note that viscosities vary from brand to brand, depending on the manufacturer's methods of standardizing), the source and kind of water used, the hand desired, the construction of the cloth, the cooking equipment, the loom speeds, humidity, and numerous other items that will affect the results desired.

Yarn spun with a tight twist will not pick up as much size as yarn loosely spun. Close construction requires a heavier and smoother size than light construction.

A formula could not specify just so many pounds of softener or of compound, for these vary within such wide limits that two or three times as much of one may be required as with another. Nor can this be based on percentage fats alone, for as we have already seen, the actions and efficiency of fats vary widely.

The best we could do would be to say that to a hundred gallons of finished size, we would use generally between 80 and 100 pounds of thin boiling or 60 to 80 pounds of thick boiling starch, and between 5 and 20 pounds of softener or compound, depending on all the variables listed previously and probably several more. To this might be added any special ingredients, such as anti-foam agents, starch thinners, etc. All this is probably not much help to the size maker.

Technical Advice from Sizing Specialists. An overseer of slashing who has had a wide experience may well be capable of setting up his own sizing formula, and changing it to suit his own conditions as soon as he sees how it runs. However, mill men can get so much free advice and assistance from their suppliers, who are not only specialists in their line, but who are also vitally interested in obtaining for them the best results, that they would be rather short-sighted not to take advantage of this.

In the old days, when mills had a weaver for every four or five looms, and loom production was considerably less compared to the modern automatic loom, tallow and wheat or rye flour were "good enough," and the warp dressers managed somehow to get along with them. But laboratory research and practical mill tests have developed starches, gelatins, softeners, and other materials that are much more efficient, and that have specialized uses. Old methods and formulas are no longer ade-

*This series of articles which deals with all phases of the warp sizing operation for cotton yarns and yarns produced from man-made fibers began in the May, 1956, issue of TEXTILE INDUSTRIES. Reprinting of the entire series in book form is planned.

quate to keep up with modern textile economy.

Competition being keen and finer and finer goods being made, goods with highly twisted warps—such as crepes—had to be sized so as to keep the twist from kinking until woven. Constructions of higher counts and peculiar weaves needed exceptionally well sized warps to resist the strain of a close weave. Also, goods were subjected to complicated processes, and so the successful size manufacturer had more and more problems to study.

The manufacture of warp sizing has become a highly specialized industry requiring a very special and very thorough knowledge of chemistry as well as a keen understanding of the mechanics of the textile industry. The old time size mixer using an empirical formula left him by his father, without understanding the whys and wherefores of it, is gradually being replaced by real scientists who know what they are doing and why.

Sizes for Various Purposes. The proper viscosity of starch should be very carefully chosen. Very thin boiling starches have their application in finishing, but for sizing they are inferior, due to their lack of viscosity and poorer film-forming properties. The starch should be no thinner than necessary to obtain the desired effect.

The warp for fine fabrics must be sized differently from the warp intended for heavy, coarse goods. Fine warps to obtain a thin fabric of low count require a very light size; if the fine warps are closely woven to obtain a fabric with substantial appearance and feel, the warp may have to be sized very heavily.

To give hardness to a fabric made with hard twisted yarn, the size should contain more starches and less fats, also gums rather adhesive and soluble, whereas when the opposite qualities are desired the size should contain gums that produce a bulky mucilage, not so much starch, and a good proportion of carefully selected fats.

A carded, long staple, well twisted warp is much less of a problem to size than one made with poor material carelessly handled. Many a warp poorly made, of inferior material, has caused sleepless nights to the warp dresser. Of course, a warp that must be bleached and further processed requires careful treatment that will not interfere with processing.

A dyed warp requires a transparent size so that the color will not be dulled, which may occur with inferior grades of starches, flours, and sizes. Potato starch is known to be most transparent of the starches. Starch gums may be chemically prepared to have almost perfect transparency.

A very heavily sized large warp requires a specially good lubricant and a size with unusual elasticity.

Filament warps require a very smooth size, so as not to disturb the individual filaments of the yarns. The size film must be tough enough to prevent peel-back of any filament ends which become broken, in order to avoid fuzz-balling. The size must be particularly clean and free of foreign matter, as any impurities show up much more readily on a filament warp than on a spun warp.

Penetration is desirable only to an extent sufficient to favor good anchorage of the warp's film rather than to make a rod-like warp, which would lack in resiliency and elasticity.

The type of weaving difficulty determines to a great extent the adjustment necessary for good sizing. For instance, carded broadcloth, poplin, and similar weaves must be sized heavily because heavy sley plain weaves have a tendency to mat up at the drop wires, give excessive clinging in the shed, and tangling of broken ends in the shed. When these broken ends tangle with neighboring yarns, the drop wires do not fall and the stop motion does not function, causing bad cloth, and often additional end breakage.

The principal cause of loom stops with this class of goods is the cutting of adjoining ends by gouts and knots. This is aggravated by heavy sizes which stiffen the gouts and knots. For this reason more softening and lubrication is needed for these weaves, as well as a size formula which makes the yarn more pliable and less stiff.

Heavy twills, sateens, etc., need sufficient size to keep them from forming lint balls between reed and harness, but excessive stiffness will cause the warp ends to "knee up," making a rough piece of cloth. The right sizing compounds should be selected to allow good weaving with moderate amounts of added size which contains the proper softeners and lubricants that will minimize knees in the cloth without weakening the starch film to such an extent that the lint balls are not suppressed.

Bark cloth and similar drapery weaves must be sized lightly with powerful softening agents that leave the maximum elongation and elasticity. The problem here is not so much abrasion from rough places on the yarn as it is the variation in tensions from end to end due to varying contraction of the ends and the general nature of the weave.

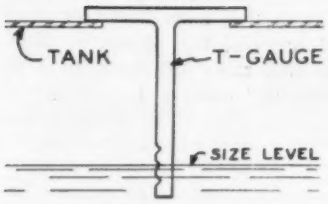
Weaves that must be finished to limited size content, such as abrasive jeans, are best sized with high viscosity mixes having low solids content. Here we desire the maximum film protection for the least amount of added size. Compounds having a good lubricating effect suitable for this situation must be selected.

Many synthetic styles must be sized with formulas that minimize set marks as a primary objective.

Slub yarns must be sized so that the slub will remain soft enough to pass through the reed and not cut adjacent ends. Very light formulas with large proportions of good softeners and lubricants are generally used.

The warp preparation man must study his weaves to determine the principal requirements for good cloth, satisfied cloth buyers, and good weaving. He must especially carefully study the loom stop reports and the causes of end breakages to determine what the primary objectives of his particular sizing job should be. He will do well to spend time in the weave room watching problem weaves and determining how they would be affected by changes in size formulas or slashing techniques.

Often it is not practical to have different formulas to suit each type of weave. Compromise formulas must be worked out which



A mill-made T-gauge fits across the opening of the kettle to indicate when the proper amount of water has been added to the mix.

can be used satisfactorily on all styles or groups of styles. These should be adjusted to suit the types of weave which is preponderant in the weave room.

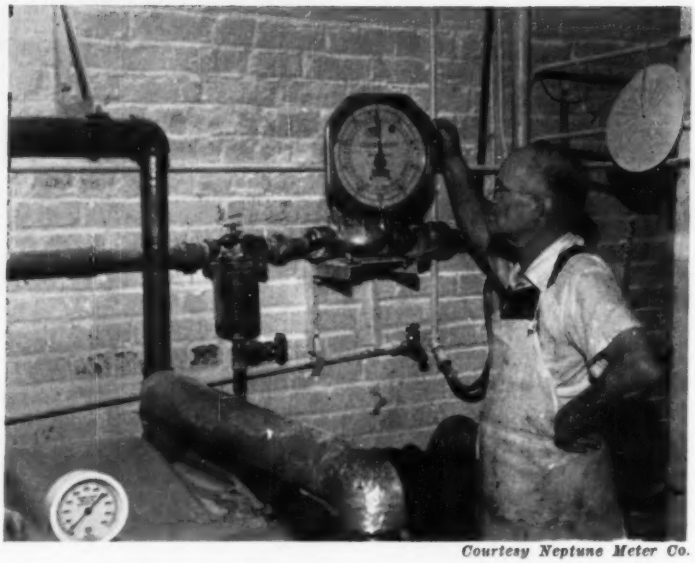
It is poor economy to use sizing ingredients of inferior quality as the cost of good sizing materials is repaid many times by the greater value of the goods obtained, as well as improved production in every way. Of course, the price of sizing ingredients is not necessarily in proportion to their value. It is an essential requirement of a good size manufacturer to have a thorough understanding of the materials available and to produce the greatest efficiency at the minimum cost.

Preparing the Mix (Starch and Rayon Gum Mixes). The amount of water necessary to bring the size to the proper water content (gallons of finished size) by the time cooking is completed should be determined by experience, and subsequently be measured into the kettle at the beginning of each mix.

Measuring may be accomplished by a gauge, such as a wooden stick with a notch cut in it, or a T-shaped gauge where the top of the "T" is placed on the kettle opening and water is run in until it touches the bottom of the gauge. Agitators must be stopped, and the water allowed to level out before measuring.

Another method of checking the water or size level is to fasten small stainless steel collars to the shaft of the agitator. These collars are always in place when ready to use, and may be easily adjusted up or down on the shaft when a formula is changed.

Still more convenient and accurate, although a more expensive method, is the use of an automatic water meter. The number of gallons required is set on the meter dial, and the cold water turned on. The meter automatically turns off the water supply at the number of gallons set, so that the operator is free to do other things while the tank is filling.



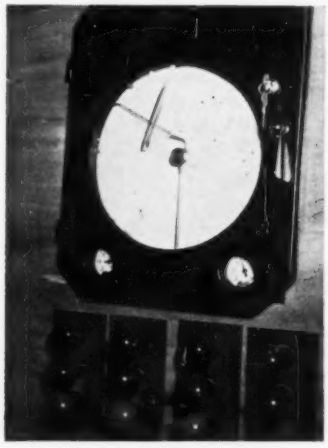
Courtesy Neptune Meter Co.

With an automatic water meter, the number of gallons of water required is set on the meter dial and the cold water turned on. The meter automatically cuts off the flow.

One mill man recommends the use of a warning light system so that a busy size cooker will not have to stand over his kettle all the time while adding water. His system shows a red light while water is being pumped into the kettle, which changes to white as the kettle is nearly full. When the pump is turned off the light shows green.

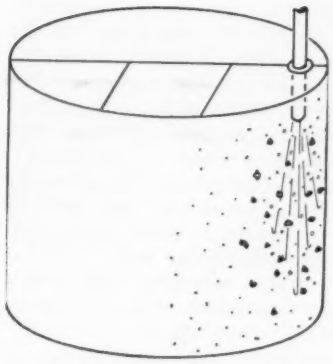
For those interested in this sort of gadgetry, we might suggest also what another mill man likes: a warning bell on the storage kettle, which rings when the level of stored size is low.

The finished gallons of size should be measured as well as the make-up water, and if the size repeatedly finishes within one inch of formula specification, no additional water should be added. If wider variation in finished volume is noted after all corrective measures are taken, such as installing proper condensation traps on steam lines, then it will be necessary to start with less water and bring the finished size to proper volume by adding hot water at the end of the cooking period. A 20-40 gallon tank or even a drum (55-gallon) may be placed above the size kettle and connected to a steam line so that the water can be kept hot.



For the busy size cooking operative, one mill man recommends warning lights of different color: red while kettle is being filled, white when nearly full, and green when the pump is turned off.

Cold water added to size after it is cooked tends to cause retrogradation (jelling of the starch), especially if added rapidly or in



After size has been cooked, if more water is needed, hot water should be added. Cold water will cause gelling of starch and lumps of gel will not disperse properly.

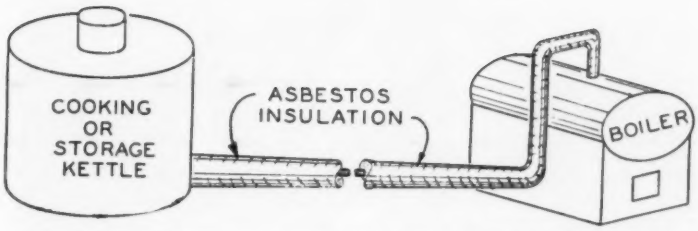
large quantities. Once this has occurred there is no way to recover the desirable properties lost.

Steam lines should be asbestos lagged all the way from the boiler to the size kettles. This will reduce condensation in the steam lines and help the size to finish right.

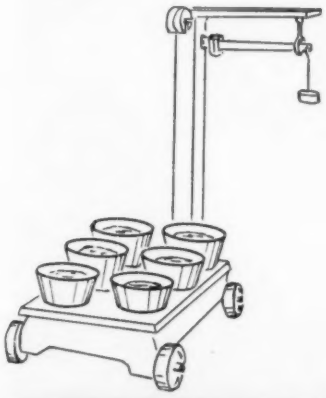
Weighing Materials for Size Mix. An important consideration is accuracy in weights. The same weight of material must be added every time. For this reason provision should be made for weighing out all of a needed material at once. If a size man must weigh out six buckets of starch singly adding them in turn to the kettle, he will often be interrupted while so doing, with the result that he may lose count and add five or seven.

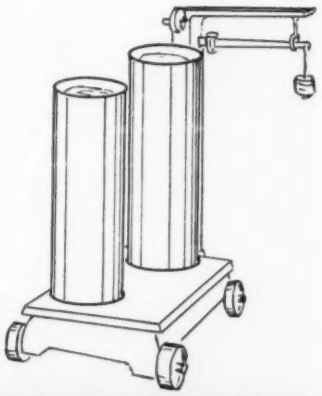
Where he must weigh out six buckets of starch, he should be furnished with six buckets to avoid all possibility of error. Better still, he should use two roving cans on a platform scale. Best of all, if the kettles are large enough, base the formula amounts on one or two standard 100- or 140-pound bags of starch, and no weighing will be necessary. Similarly, two buckets or a single large can should be used to weigh the slashing compound, if it cannot all be weighed in one bucket.

Scales for weighing compound should be accurate to one quarter pound or less than five per cent of what is being weighed. If thinning

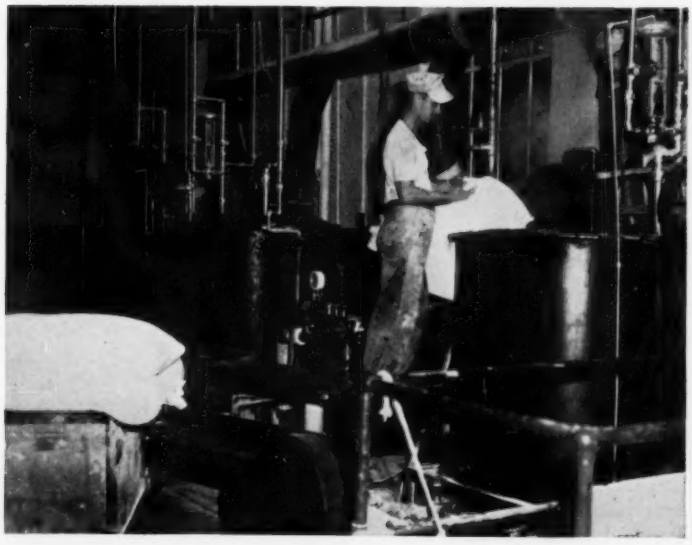


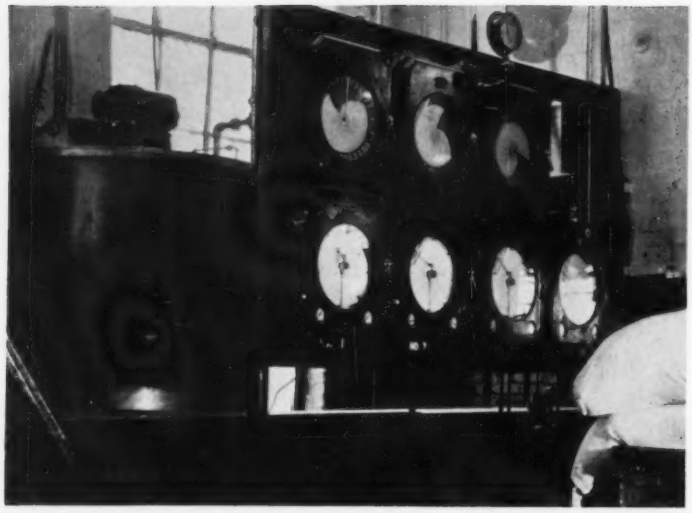
Insulate steam lines from boiler to size kettles to reduce condensation.

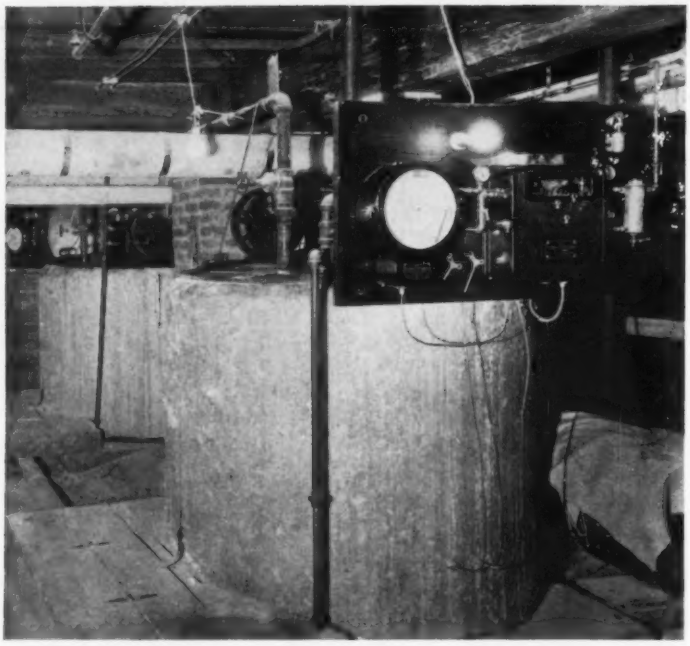




If starch must be weighed out so that six buckets full are used, furnish the size cooker with six buckets so that all can be filled and he will not lose count and use seven or five. Or, he can use two roving cans. (Below) If his system is to use part of a bag, the scales must be accurate. (Right) Better still, base the formula on an entire 100-lb or 140-lb bag to avoid possibility of error.







Cooking controls are invaluable in preparing the size mix. However, they must be properly maintained. Do not rely on them just because they record 212 F, unless active boiling is visible.

preparations are used, the scales should be accurate to one ounce. In some instances separate scales are used for weighing compound where the larger starch scales are not sufficiently sensitive.

The starch should be stirred into cold water, never hot water. as hot water will make lumps that are impossible to cook. Except for unusual materials, it is quite satisfactory, and much simpler, to add everything else as soon as the steam is turned on. Some mills aid preliminary stirring with air blown through the steam coils.

Cooking of Size. Before warming of water is begun, the starch should be stirred ten minutes at least in the cold water, in order to break up lumps, and to wet thoroughly all of the starch granules. If heating is started too soon and a starch paste forms around the outside of a lump, practically no amount of boiling will get the inside of the lump into solution, and if the size is not filtered, this lump will be plastered on the warp, gluing several ends together, some of which may break out at the lease rods.

Where enzyme thinners are used, the directions for the particular enzyme should be followed. Nothing but the enzyme and the starch should be added to the kettle until the action of the enzyme has been completed, for many materials interfere with enzyme action, some of them stopping it.

For other mixes using either oxidizing thinners or no thinners, the mix should be heated at a uniform rate, and at such a rate that boiling will begin twenty to forty minutes from the time that the steam is first applied. Whatever time is required, this rate of heating should always be used to obtain uniform results.

Cooking Requirements of Starch. The viscosity of a starch size depends to a great extent on how fast and how long it has been cooked, and how much agitation it has had.

Thin-boiling 40-F starches require on the average 45 minutes to one hour cooking. During the cook, the boiling must be very active so that steam bubbles are seen to rise to the top. This is very important. Much avoidable size shedding can be traced to improper cooking, especially at too low temperatures. Automatic controls which have not been maintained adequately should not be relied upon just because they record 212 F unless active boiling is visible.

Rayon gums are adequately cooked in thirty to forty minutes, depending on the particular gum.

For thick-boiling starches, one and a half to two hours are required to obtain a fairly uniform viscosity, and some starches such as sago may require three to four hours cooking. Most corn and tapioca starches have had plenty of cooking in one and a half hours.

Potato should generally be cooked for two to two and a half hours. Potato starch should be cooked longer because it takes longer to come to a fairly constant viscosity (see chapter on starches).

The usual commercial grades of potato starch come to a much higher peak viscosity than does corn. With sufficient cooking, the viscosity is broken down to about that of corn starch, but during the cooking the viscosity change is much more rapid than with corn, as it has a much greater drop. The corn starch viscosity change, having normally a lower peak viscosity, is more gradual, and it can therefore come to a more nearly uniform stage sooner.

This is more important in sizing, where batches may be held for several hours after preparing, than it is in finishing and printing, where the batches are used sooner, and the higher viscosity of potato starch is more important. In sizing, the uniformity of the mix is more important than a high viscosity.

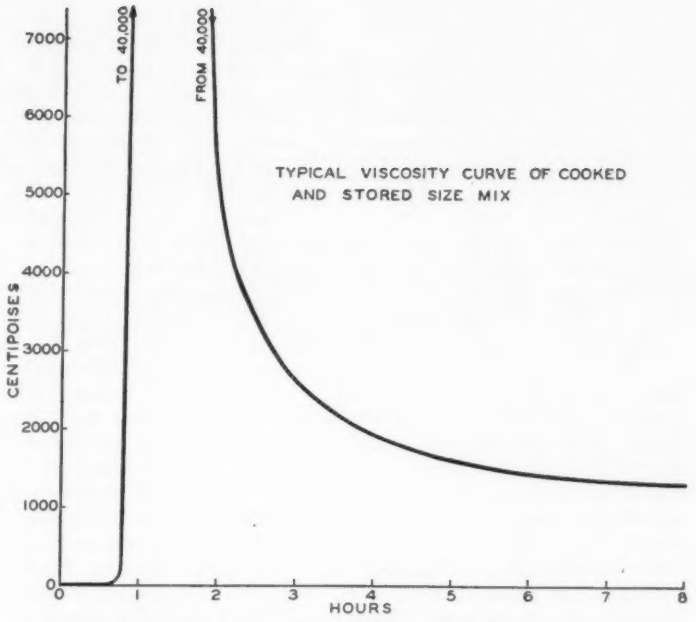
Cooking times should be kept standard, since the viscosity of the starch is dependent on how much the granules are broken down by cooking and agitation. As mentioned, this thinning effect is most rapid at the beginning of the cook. The times of cooking recommended for the various starches are those at which the rate of thinning has decreased to a point where uniform sizing may be obtained.

Another thing to remember is that an insufficiently cooked paste will not be as adhesive as one well-cooked, and will tend to shed more.

If necessary to add hot water to reach correct volume, stirring should be continued while water is being added, and the steam must be continued so that the mix will be boiling when the final level is reached. When stopping the agitators to measure the level, the water intake should also be closed. The best way to measure the final level is with the wooden "T" previously described. One "T" may be used for both measures, by cutting a notch in the vertical part or by tacking a small cross-bar onto the stem of the "T."

Other than ordinary boiling at atmospheric pressure, several other methods are in use for cooking starch pastes. In Europe, starch sizes are cooked in a closed pressure kettle, which has the same effect as the pressure cooker used in many American kitchens. The cooking period is cut to about ten to twenty minutes (depending on the pressure used for cooking), and the resulting size has the same properties as a size cooked at atmospheric pressure.

Agitation is continued with a stirring paddle just as in the standard American kettles, although some of the European kettles are oval in shape with agitators in each end of the oval. The principal advantage in the shorter cooking period is the economy of steam. In large installations the



Typical Viscosity Curve of Cooked and Stored Size Mix. The first few minutes the mix is being stirred cold, followed by steam heating. Viscosity rises suddenly at the pasting temperature, and then falls rapidly again, to a fairly constant value. This is an actual curve on an experimental kettle of size. Concentration, ingredients, agitation will all affect the position of the curve, but the general form is always the same.

Swiss pressure cooking size kettles.

Courtesy Ruti Machinery Works Ltd.

shorter cooking period may allow the use of fewer cooking kettles.

Homogenizer Cooking. The practice of using a "homogenizer" for preparation of starch sizes has become quite common in a comparatively short time. The homogenizer itself is described in the chapter on equipment.

During the first few years of the use of homogenizers, much experimentation was done to determine the most effective means of its use. We could probably learn still more, but the principles have been developed. It has been accepted that the best method of procedure is to prepare the starch size in the normal manner, cooking with the compounds and other ingredients which may be required in a standard open-coil cooking kettle. Heat is passed in until the boiling point is reached, then the mix is pumped through the homogenizer to the storage kettle.

Although the paste could be passed through the machine before it had come to a boil, it was found difficult to obtain uniform results when this was attempted. During the pasting stage of the cooking operation, some of the starch granules are swelling, others have not yet begun to swell. These latter are probably not affected to the same extent on passing through the homogenizer.

The homogenizer is not a cooker, but a mechanical method of breaking up the swollen starch particles by forcing them through a small space under high pressure. For this reason, it was found that more uniform results were obtained if the cook was continued until the swelling of the granules was complete. It is very difficult to stop at the same intermediate stage in the cooking cycle each time.

Of course, some of the batch is cooked longer, while waiting to be pumped through the homogenizer. However, this will be uniform with each batch, and will not be a source of variation between batches.

Pressures of from 500 to 3500 pounds are used. Within limits, the viscosity of the mix can be controlled by selection of the proper pressure. From standard starches, sizes similar to those prepared with thin-boiling starches may be obtained. The higher the pressure used, the more fluid will be the final size mix. At the higher pressures, one hundred pounds variation in pressure will not change the fluidity as much as at the lower pressures.

There has been and still continues to be a great deal of controversy over the merits of the homogenizer and whether or not the sizes prepared in this machine will produce sized yarns of superior weaving qualities. The consensus at present seems to be that there is no appreciable difference, nor is there any appreciable difference in the amount of starch used. The greatest attraction of the homogenizer is that it allows sizes of greater concentration to be prepared from normal unmodified starches, and thus saves the extra cost of a modified starch or the inconvenience and customary variation of mill chemical treatment of the starches.

The use of the homogenizer is simple enough. The principal things to be watched are that the size should be cooked the same way for the same length of time each time before passing through the machine, the same pressure should be used each time, and the valves should be properly maintained to give uniform results. Hot water should be pumped through the machine after each use, to flush out the size before it has a chance to harden.

Injection Cooking. In a search for a more rapid and effective method of cooking size batches, the steam injection method was developed, and is usually used in combination with a large centrifugal pump which gives strong agitation and rapid mechanical breakdown of the starch paste viscosity. This equipment will be described later.

All that is required for cooking by this method is the addition of the proper ingredients to the kettle, stirring cold long enough to completely disperse the starch, then turning on the steam. Observing the cook is not required, as the automatic cut-off will stop it at the proper point. The mix is then pumped into the storage kettle for use.

Heat Exchanger Cooking. Several models of heat exchangers have been tried for size cooking. Only a few are in use at the present writing. They are described in the chapter on equipment.

For preparing size for use in heat exchangers, a cold slurry of the starch is made of the proper proportions of starch and water. This starch slurry must be kept suspended by continual agitation until it has been cooked by passing through the heat exchanger. Addition of other ingredients may be handled in any of several manners.

Water-dispersible or water-soluble ingredients may be added directly to the slurry. Many sizing compounds, however, are not dispersible in water alone, although they are quite readily dispersible in a starch paste. These materials may be added to the storage kettle after the starch has been passed through the heat exchanger. Or, if a continuous operation is desired they may be added to the stream of slurry being pumped into the heat exchanger by means of a proportioning pump, which will add a definite amount of compound to every gallon of slurry pumped.

It has been found that with starch sizes, a compound which is too well emulsified does not lubricate the film as well as the more commonly used products; therefore, the latter methods of adding size are preferred by some slasher men, so that they can use the more efficient lubricants.

In this method of cooking, variation may come from two sources: first, the temperature of the steam used for the heat source; second, the speed of pumping. The heat exchanger as used in preparing sizes is essentially a continuous pressure cooker. The time the size is exposed to the heat, while it is in the heat exchanger, will determine how well it is cooked, and how far the process of breaking down the starch granules has progressed. This can be controlled by varying the size of the feed pump used, and once set up, may be further controlled by a throttling valve in the feed line. Chemical modifiers may

be added to the slurry, which will also act to break down the starch viscosity to give a thinner mix. Generally, the size remains only a few seconds in the heat exchanger, from which it goes directly to the storage kettle, after which it is handled in the normal manner.

Size Box Temperatures. A continual ebullition of steam should be maintained in the size box, not only to maintain the proper temperature and viscosity, but also to prevent jelling of the size in the corners of the box, where hard lumps could form and cause trouble when broken loose and squeezed into the warp sheet.

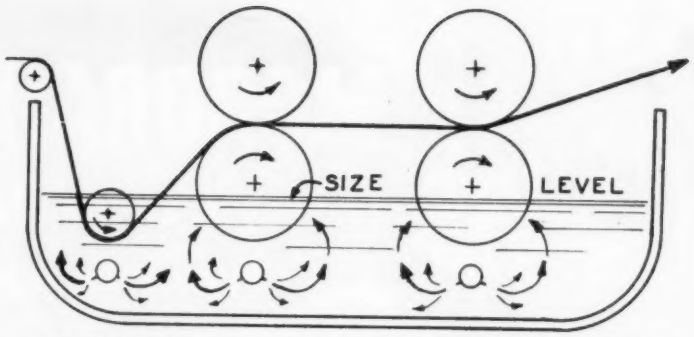
Here heating with live steam should be practiced, as the condensation of the steam will make up for the water lost by evaporation. Temperatures of 204 - 206 F should be maintained in the size box. At these temperatures, some steam will bubble through the size without condensing, giving the appearance of boiling, even though the boiling point of the size has not been reached. It is easier to maintain these temperatures with live steam, and the visual observation of the bubbling will be an easy way for the slasher tender to be certain that everything is going along well.

It was considered in the past that this was much too hot for rayons. However, the modern rayon fiber is much more stable than its ancestors, and these temperatures during the short period of exposure will do no damage.

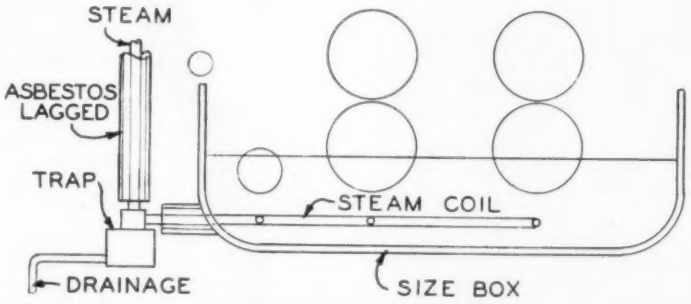
The agitation obtained from the introduction of live steam deflected toward the bottom of the box by properly designed coils will also help keep the size from scumming over during brief stops for leasing or cutting laps.

The steam lines to the size box should be trapped to prevent dilution of the size by undesired addition of too much condensate.

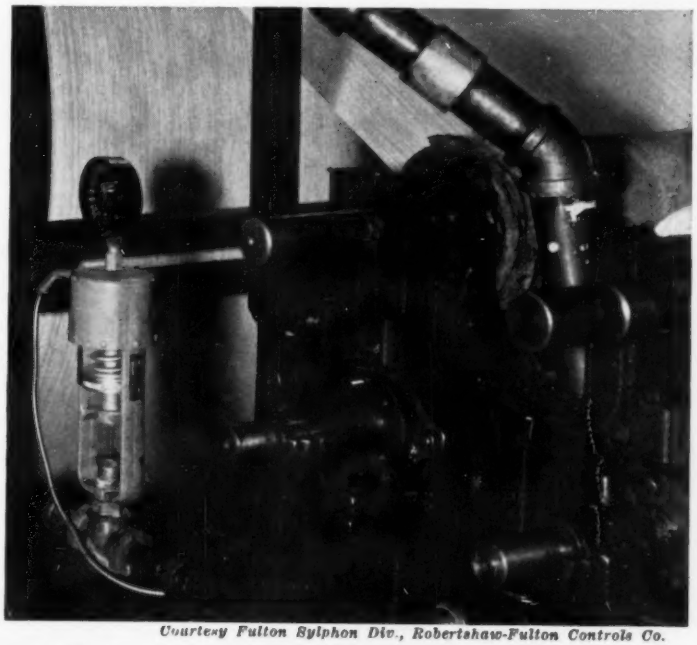
The size box temperatures should be maintained very carefully within narrow limits. All too often it is not realized what a large difference in viscosity of the starch mix is obtained as a result of just a few degrees variation in temperature. These viscosity variations will cause differences in penetration and pick-up of the size, which are to be avoided for best weaving results.



Steam in size box is deflected toward bottom of box. The agitation so produced helps to reduce a scum forming on the size during brief stops of the slasher.



The steam line to the size box coil is asbestos lagged and has a trap to minimize condensation in the size box.



Courtesy Fulton Sylphon Div., Robertshaw-Fulton Controls Co.

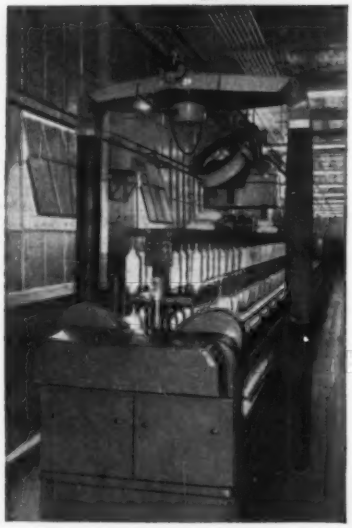
Size box temperature control with indicating thermometer.

The author knows of a few mills which deliberately use size in the box at a lower temperature (190-

Now! MONORAIL Cleans--

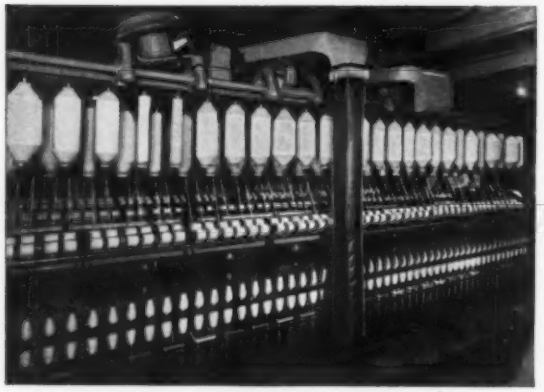
Frames, Underframes, Ceilings From Track or Creels

1



New type underframe cleaner applied to standard cleaner units traveling on Monorail track.

2



Creel mounted units clean ceiling, frame, and underframe.

3

Underframe unit mounted on old cleaning system to complete cleaning operation.

Standard units for cleaning the upper part of frames—underneath the frames, and the ceilings—each individually designed to perform their particular operation.

These units can be designed for travel on either Monorail overhead track or on creel mounted Tri-rail track.

Similar automatic units are also available for cleaning weave rooms by means of single Monorail tracks over rows of looms or on crane-type units for multiple row loom cleaning.

Let an experienced textile engineer recommend the particular cleaning units to solve your cleaning problems.

Member of American Textile Machinery Assn.

AMERICAN MONORAIL COMPANY

OVERHEAD HANDLING EQUIPMENT

13106 ATHENS AVENUE, CLEVELAND 7, OHIO (IN CANADA—CANADIAN MONORAIL CO., LTD., GALT, ONT.)

195°) in order to increase the viscosity of the size so as to change the rate of pick-up for certain styles, while using the same formula at a higher temperature for other styles. Although this may be done, it is not to be recommended for general practice for the reasons given above. The box should in this case have good agitation, and the operation should be carefully watched to avoid hard size. Such variations, furthermore, should be attempted only with modified starches, which have less gelling tendency than the natural starches.

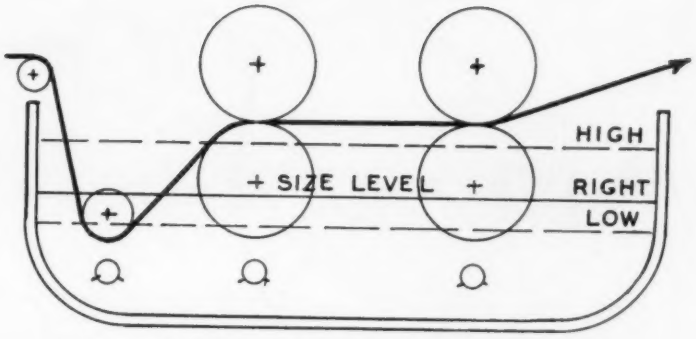
The level of the size in the size box should be kept as low as is consistent with the construction of the box and the accuracy of the level control method. There is some variation in the amount of pick-up with a variation in the size level, although this variation is not great and is not the main reason for close control. The less size that is kept in the box, the sooner this size is used up and replaced, giving less chance for a change in the size properties or concentration.

The immersion roll should be run with the top of the roll above the surface of the size. There is a tendency for the yarns to twist and roll when they first hit the hot size, and if the immersion roll is run too deep, too much space is allowed for the yarns to twist around each other, and for their fibers to become entangled. Therefore, the proper depth should be such that there is about an inch of size between the roll and the yarns where they enter the size.

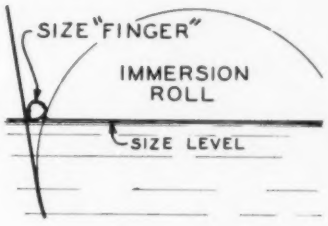
Of course, the roll should not be run so high that the yarns touch the roll before they enter the size, as proper penetration of the size will not be obtained. All sides of the yarn should be wet by the size before it touches the immersion roll.

In the absence of automatic controls, it is generally found safer and better practice to run the immersion roll too deep rather than too high, to be on the safe side. A few twisted or rolled yarns are not as much trouble as a length of partially sized warp.

Agitator speed in the cooking kettle should be 55-65 rpm, preferably with stationary baffles between paddles across the kettle in order to mechanically break down the starch granules. Vertical baffles of stainless steel angle iron welded to the inside wall of the kettle are also satisfactory.



Showing proper level of size in size box.



Agitator speed in storage kettles should be 15-20 rpm, or only sufficient to prevent scum formation —slow enough to minimize further breakdown of the starch after it has been cooked.

Storing Size. The question of how long size may be stored without detrimental effect has long been debated. Its answer is, however, simple. It is not dependent on the size, but principally on the construction of the goods to be woven.

All starch-based sizes will definitely deterorate in sizing value on standing a few hours or more. If the weaving is easy, a reasonable deterioration will not affect it greatly, but on hard constructions, the difference will be felt in the weave room. It is only necessary for the superintendent to decide whether the additional cost of lost production would be balanced by the saving in the slasher room.

In any event storage should be done only to prevent throwing away size—and in many cases it will be found cheaper in the long run to throw it away. Overnight storage is in some cases permissible where weaves are easy, but the size must be kept warm, and stirring must be kept at a minimum—just enough to prevent formation of a scum on the surface.

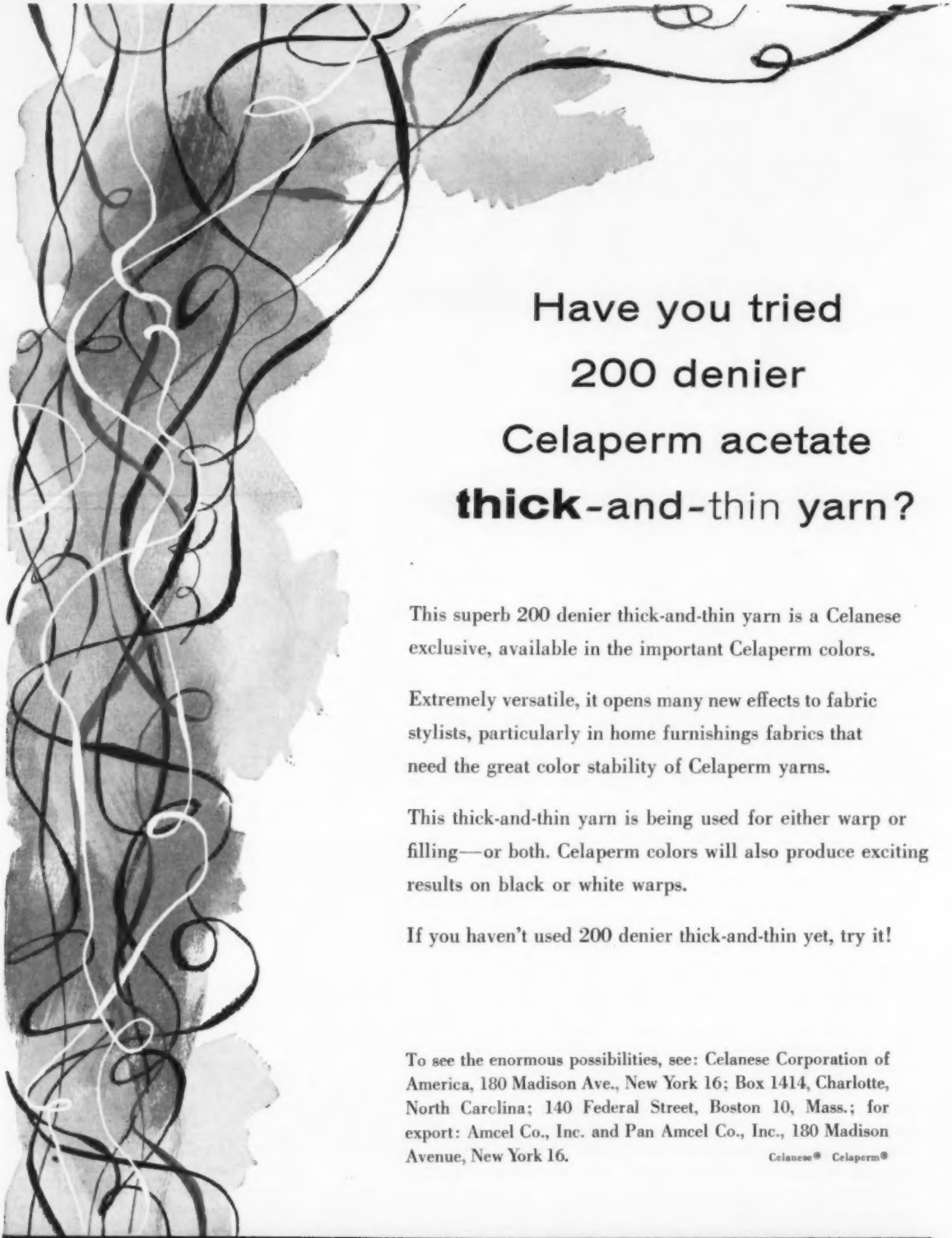
Closed steam coils or a jacketed kettle must be used, and the kettle should be asbestos-lagged or otherwise insulated to prevent dilution through steam condensation. Week-end storage is never justified. A size which has been allowed to gel will never again regain its adhesiveness, its smoothness, or its film-forming properties.

Only enough size should be stored in the normal operating process to keep just ahead of the size cooker. There is definitely no excuse for keeping all kettles full all the time, since it causes no more work to cook size when needed than to cook it several hours ahead.

The size batches should be as small as it is convenient to make them, so that fresh size will be always available; otherwise there may be great variations in viscosity. Fresh size should be prepared every two or three hours.

Temperatures in the storage kettle must be between 195 and 200 F; that is, temperatures must be high enough to prevent gelling of the starch, but not so high that much further breakdown of the viscosity of the mix is produced. As already mentioned, the agitator in the storage kettle should move at about 15-20 rpm.

Preparation of Gelatin Sizes. Many of the precautions mentioned in the previous pages with regard



Have you tried 200 denier Celaperm acetate **thick**-and-thin yarn?

This superb 200 denier thick-and-thin yarn is a Celanese exclusive, available in the important Celaperm colors.

Extremely versatile, it opens many new effects to fabric stylists, particularly in home furnishings fabrics that need the great color stability of Celaperm yarns.

This thick-and-thin yarn is being used for either warp or filling—or both. Celaperm colors will also produce exciting results on black or white warps.

If you haven't used 200 denier thick-and-thin yet, try it!

To see the enormous possibilities, see: Celanese Corporation of America, 180 Madison Ave., New York 16; Box 1414, Charlotte, North Carolina; 140 Federal Street, Boston 10, Mass.; for export: Amcel Co., Inc. and Pan Amcel Co., Inc., 180 Madison Avenue, New York 16.

Celanese® Celaperm®

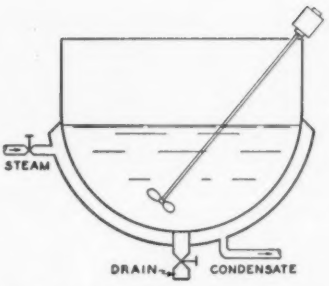
CELAPERM ACETATE | A Celanese CONTEMPORARY FIBER

to the preparation of starch-based sizes apply also to gelatin-based sizes, particularly with regard to weighing, measuring, etc. The actual preparation of gelatin size is somewhat simpler than that of starch sizes.

The principal precaution is to be certain that the gelatin is soaked for a sufficient period in cold water, in order to swell the gelatin particles before heating. Otherwise the particles may not disperse properly, and the unswollen particles will end up as solid particles on the warp, giving a harsh, sandy feel.

The required amount of water is added to the kettle, and the gelatin poured in. Stirring may be done during the period of swelling, but is generally not actually necessary. The swelling will proceed a little faster if the stirrer is turned on. The amount of time required for swelling may vary with the type of gelatin, and its particle size Usually thirty minutes is sufficient with rayon grade gelatins, but the recommendations of the manufacturer should be followed.

Kettles for gelatin cooking are usually heated by a steam jacket, less often by closed coils. The action of live steam, which is beneficial in the preparation of starch-based sizes, is not required, and may even be detrimental to the gelatin, which can be broken down so that its gel strength and its film-forming characteristics are damaged by overheating. Since gelatin mixes are very fluid when warm, heavy stirring equipment is not required, and the gelatin sizes may be stirred by a small high-speed propeller, such as the



Construction of cooking kettle for gelatin sizes. These kettles often have an open top.

Lightnin-type mixers.

At the end of the swelling period, the stirrer is turned on, and heating begun. Softeners, penetrants, antifoams, or other ingredients may be added at this point, or the mill may use a compound which includes all the necessary ingredients other than the gelatin. The mix is heated gradually over a period of about twenty minutes or more until it has reached a temperature of 160 F, when it is ready for use.

Gelatin sizes are usually applied at temperatures of between 140 and 160 F, and should be stored at this temperature. If cooled too much, the mix will gel, although this is not as bad as with starch, for a gelatin size gels reversibly, and may be melted again to a liquid by heating. Storage at high temperatures may lead to decomposition of the gelatin and a loss of its strength of film.

If gelatin is to be stored for any length of time, the mix should also contain an effective antiseptic to prevent mildew or other microorganism attack.

Except under unusual circumstances, we would recommend application at 145° F. The temperature should be held as nearly constant as possible, as the fluidity and the penetrating power of the gelatin will vary with the temperature.

Polymer-Based Sizes. Sizes prepared from polymeric materials, such as the styrene polymers, carboxymethylcellulose, etc., are in general even simpler to prepare than gelatin sizes. The soaking period is not required. Everything may be put into the kettle at once, and heating begun immediately, of course with the usual precautions taken on measurements, weighing, cleanliness, and so on. It is necessary to heat only to the temperature at which the manufacturer recommends the material be used, and then proceed with the application. Here again, application temperatures should be held constant, if uniform results are to be expected.

Personnel. The importance of having highly competent personnel in the slasher room is often underestimated. Too often is the slasher room looked upon as a dirty and unpleasant job, to which employees that have no particular talents in other directions are sent. Where carelessness in choice of slasher room personnel has been going on for years, there is no basis of comparison to show how much better the mill as a whole would operate with competent personnel in this position.

(Continued next issue)

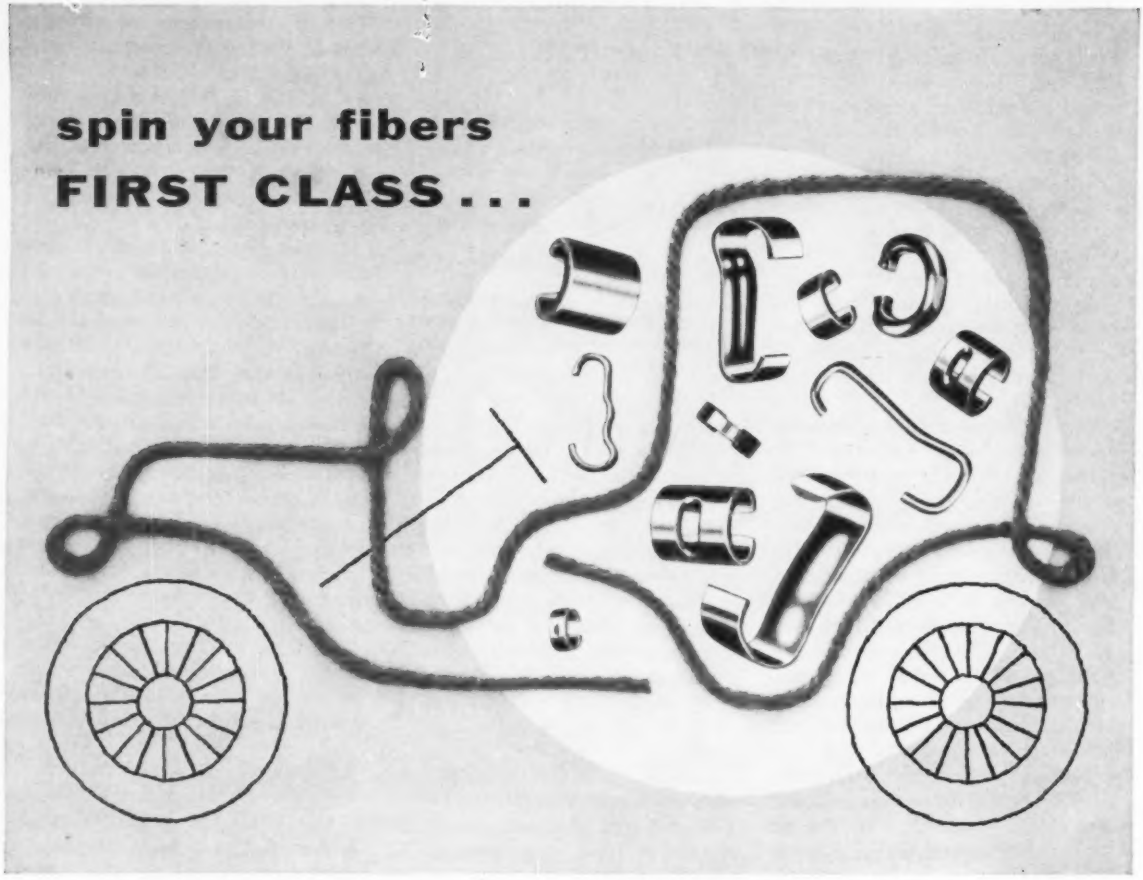
Wishing you a real Old Fashioned

MERRY CHRISTMAS

and a

NEW YEAR of happiness

TEXTILE INDUSTRIES' EDITORS AND BUSINESS AND CIRCULATION REPRESENTATIVES



via NATIONAL-STERLING Ring Travelers!

Steer clear of traveler troubles and **keep your yarn production rolling** with quality-engineered National-Sterling Ring Travelers.

You'll find that precision balanced, scientifically tempered and finished National Travelers consistently deliver more pounds of first class yarn . . . at highest spindle speeds . . . with a minimum of ends down. Whether you're running synthetic, blends, or natural fibers, you can depend on National Travelers for finer spinning and twisting. Remember, too — when you specify National, you can select your travelers from thousands of different sizes, weights and styles. Or, if necessary, you can have travelers designed and made to your exact specifications.

Let an experienced National-Sterling Engineer help you select the right traveler for your particular spinning or twisting operation. Write, wire or phone National Ring Traveler Company and Sterling Division, 354 Pine Street, Pawtucket, R. I. or Southern Office and Warehouse: P. O. Box 112, Gaffney, S. C.

NATIONAL
Sterling
RING TRAVELERS

F. L. CHASE, JR., *Pres. & Treas.* L. E. TAYLOR, *So. Mgr.*

NATIONAL RING TRAVELER CO. PAWT. R.I. U.S.A.

FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES

Union wins – employees lose

by Ringgold Arden
Exclusive

ON THURSDAY, October 18, *The Atlanta Constitution* carried the following dispatch from Darlington, South Carolina:

> The Deering-Milliken chains' Darlington textile plant, whose employees recently voted to unionize, will go on the auction block. Plant stockholders, backing a recommendation by the board directors, voted to liquidate the Darlington Manufacturing Company at a closed session today. The plant accounts for about one-third of this community's economy.

There is some interesting background to this announcement. Deering-Milliken have had some pretty bitter experiences with labor rackets. The Dallas Manufacturing Company at Huntsville, Alabama, after being racket-ridden for years and suffering serious losses through strikes, was finally liquidated and written off as a hopeless proposition. Only about two years ago, the Lockwood Company at Waterville, Maine, was likewise closed and liquidated.

One of our Maine friends reported that Mr. Milliken seemed to have made every effort to keep that mill in operation, and that he had a conference with some of the leading citizens of Waterville to explain the problems faced by the company, which was a very old concern and long a valuable part of the local economy. The labor union people, however, took the arbitrary position that they must have their way regardless of the problems faced by the mill, and assumed that they were not putting on enough pressure to run the mill out of business. Evidently they were wrong, because the mill was closed and all of the employees lost their jobs.

It would seem that these experiences have taught the Deering-Milliken organization the futility of trying to operate a plant which is under labor union domination, and without waiting to fight the thing out any further, they decided they might as well close the plant themselves as let the union close it for them later.

WE HAVE no way of knowing how many of the employees of the Dallas Manufacturing Company were dedicated labor union adherents and how many had been drawn into the union unwillingly by our national labor laws which permit forced unionism. No figures are available about this situation at the Lockwood Company, and we have not heard how the election at the Darlington Manufacturing Company came out, but we have never heard of one of these elections being carried unanimously, and we do know that if a bare majority votes for the union, the group which lost the election by a handful of votes must join the union, contribute to its treasury, and be governed by its discipline. It is also usually the case that the less desirable employees in a plant are the most enthusiastic union members.

In any honestly run business there is an attempt to pay employees on the basis of their capabilities and value to the employer. This always creates a greater spread between the wages of good help and poor help than in a unionized plant. The incompetent and inefficient help are therefore the ones who are usually enthusiastic about the union. The good help have nothing to gain from the union and much to lose, because the wage increases which the union always seeks to force will benefit the poorer help far more than the most efficient employees.

As a result of this condition, a company which had lost a union election by a narrow majority might feel that practically all of the good help was included in the group which had voted against the union, and that the victorious union crowd would make things pretty disagreeable for fellow employees whom they looked upon as enemies of the union, so that in time the mill's efficiency would deteriorate not only from the natural effects of unionism but from disgruntled good help drifting away to other plants.

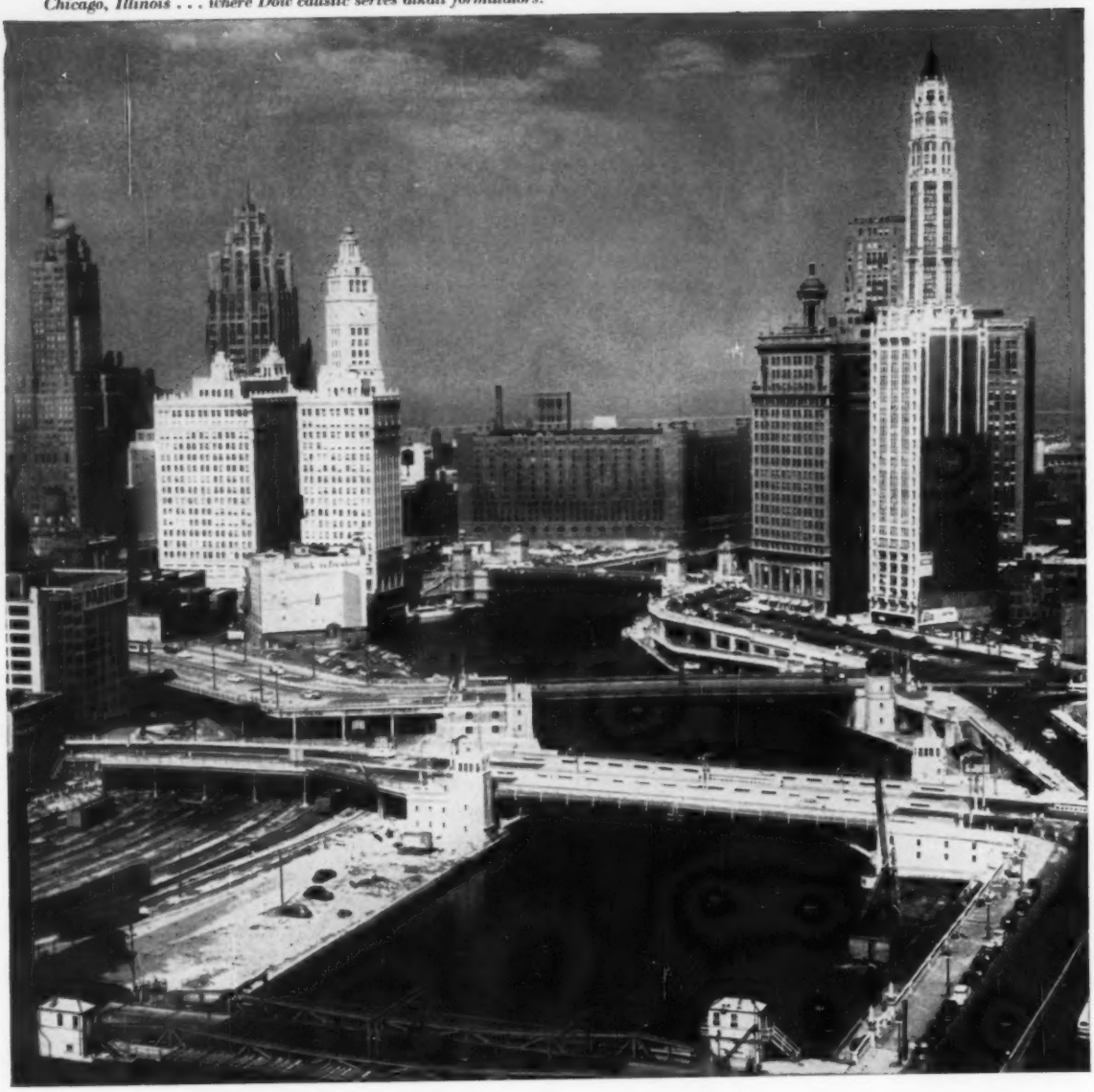
It seems impossible for these labor union enthusiasts to believe that there are great numbers of working people who disapprove of unions and who actually detest them. Certainly, the fact that about three-fourths of all of the working people in the United States have refused to join unions ought to be proof enough that unionism is not too popular with many persons.

THE REACTION of the frustrated union in this Darlington episode was to file with the National Labor Relations Board charges of unfair labor practices against the plant. That there was anything unfair about this union throwing several hundred people out of work by its insistence on trying to run the plant would never occur to the labor racketeers.

That these people are racketeers seems to be amply proven by their attitude in this case. If they had the slightest interest whatever in the welfare of these working people, they would have immediately withdrawn from Darlington when the stockholders of this mill decided to liquidate it as an alternative to having to manage it under labor union dictation.

It seems amply clear that these labor racketeers have not the slightest possible interest in the welfare of the people they are so anxious to exploit. If they can persuade a majority of the people in a plant to vote for the union, and then force the rest of them to join and pay dues, they have won an important financial advantage. If

Chicago, Illinois . . . where Dow caustic serves alkali formulators.



wherever you're producing

DEPENDABLE CAUSTIC SODA DELIVERY IS ASSURED FROM DOW

Dow is the one producer, you know, supplying caustic soda to industry everywhere. Wherever you produce, you're *sure* of getting rapid, dependable service from Dow.

The *three* modern Dow plants and *six* additional shipping terminals . . . stretching from Bayonne, New Jersey to Los Angeles, from Chicago to Freeport, Texas . . . start the order to you immediately on your teletype, wire or call. Ocean-going tankers, inland barges, tank cars and tank trucks . . . the full facilities of the industry's most extensive and flexible distribution network go to work without delay, getting Dow caustic to you *now*.

Then, too . . . Dow customers benefit from continual process research, stringent quality control in plant and in transit, prompt field technical service. Does Dow have *your* order? THE DOW CHEMICAL COMPANY, Dept. AL 756F-1, Midland, Michigan.

you can depend on DOW CHEMICALS DOW

the plans backfire and the employer is forced out of business, the racketeers depart for other promising pastures with no apparent regret.

It is always important to differentiate between a true labor union and a labor racket. A labor union would normally be a local organization, comprising the employees of a given plant, for the exclusive benefit of the employees of that plant. A racket, as defined in Webster's Dictionary, is "A system of obtaining money or other advantage fraudulently or undeservedly, usually with the outward consent of the victims." That is a very neat and accurate definition of the typical American labor union, and we therefore usually refer to these organizations as rackets rather than unions.

With honest unionism there should be no reasonable complaint, but with unionism organized into nationwide monopolies for the purpose of obtaining benefits fraudulently and undeservedly for its membership, there should be nothing but opposition from thoughtful persons interested in the general welfare of the country. The typical American labor union is not only a racket, but a very dangerous racket, because it is designed to exploit working people for the benefit of the union organization.

When the steel workers, automobile workers, electrical workers, and other monopolistic rackets "undeservedly" obtain by extortion wage increases entirely out of keeping with the capacity of the public to pay, that public is exploited in higher prices for practically every manufactured article.

THE UNION members themselves are often exploited in more ways than one. As an example which has been repeated hundreds or perhaps thousands of times, we can take the case of a concern with which we are acquainted, which was built up from nothing by an able, ambitious, and ener-

Train supervisors, Moffie tells STA's Northern N.C.-Va. group

Staff Report

■ APPROXIMATELY 200 members of the Northern North Carolina - Virginia Division of the Southern Textile Association met at Cooleemee, N. C., November 10, and heard Dr. D. J. Moffie, director of public relations, Hanes Hosiery Mills, discuss what makes a good supervisor.

We must have a practical and realistic view to the problem at hand, and although certain principles may apply, no book can give us all the answers, Dr. Moffie told the group. Supervisory personnel should receive the best training and development efforts because of their key positions. The supervisor usually takes the brunt of it when anything goes wrong, and he should have every advantage in learning to cope with his responsibilities.

Management must take leadership on the offensive, not the defensive. The qualities required for a good supervisor are:

1. Ability to work with people (75% of success depends on this).
2. Know the technological aspects of the job.
3. Must work at becoming or making a good supervisor.
4. Management must set the right climate through correct or good communications to make the supervisor feel that he is a member of the team.

The company benefits from efforts to achieve the goal by selecting the right person to do the job. This can be done by: (1) tests; (2) evaluation; (3) training.

Dr. Moffie

Emphasis should be placed on instruction in human relations, and management must produce a climate to encourage and build good supervisors.

Dr. Moffie cited a survey made to determine who was to blame for the foreman's failure. Management's reasons as tabulated from the survey were as follows:

78% said foreman can't become management minded.

70% said foreman couldn't get workers to become cost-conscious.

38% said foreman had an inferiority feeling.

26% said foreman lacked cooperation.

26% said foreman failed to interpret management directives.

22% said foreman failed to get operators to cooperate.

The foremen's answers to the same question were as follows:

80% said management did not inform the foremen.

68% said management failed to praise when waranted.

38% said management classified everyone as a whole instead of recognizing them as individuals.

34% said management employed on basis of technical qualifications but not otherwise.

28% said management made too many dogmatic decisions.

22% said management "talked down" to supervisors.

In view of such evidence it appears that poor communications exist from management throughout the organization, Dr. Moffie concluded.

New officers elected at the meeting were as follows:

Chairman: Charles Ward, Highland Cotton Mills, High Point, N. C.

Vice-Chairman: H. W. Buchanan, Erlanger Mills, Lexington, N. C.

Secretary: Howard Barton, Fieldcrest Mills, Inc., Spray, N. C.

Elected to the executive committee were: Nelson W. Kessell, supt., P. H. Hanes Knitting Co.; Dave E. Sions, supt., Fieldcrest Mills, Inc., Fieldale, Va.; Herman Cone, Cone Mills, Reidsville, N. C.

Chicago, Illinois . . . where Dow caustic serves alkali formulators.

DOW

wherever you're producing

DEPENDABLE CAUSTIC SODA DELIVERY IS ASSURED FROM DOW

Dow is the one producer, you know, supplying caustic soda to industry everywhere. Wherever you produce, you're *sure* of getting rapid, dependable service from Dow.

The *three* modern Dow plants and *six* additional shipping terminals . . . stretching from Bayonne, New Jersey to Los Angeles, from Chicago to Freeport, Texas . . . start the order to you immediately on your teletype, wire or call. Ocean-going tankers, inland barges, tank cars and tank trucks . . . the full facilities of the industry's most extensive and flexible distribution network go to work without delay, getting Dow caustic to you *now*.

Then, too . . . Dow customers benefit from continual process research, stringent quality control in plant and in transit, prompt field technical service. Does Dow have *your* order? THE DOW CHEMICAL COMPANY, Dept. AL 756F-1, Midland, Michigan.

you can depend on DOW CHEMICALS DOW

the plans backfire and the employer is forced out of business, the racketeers depart for other promising pastures with no apparent regret.

It is always important to differentiate between a true labor union and a labor racket. A labor union would normally be a local organization, comprising the employees of a given plant, for the exclusive benefit of the employees of that plant. A racket, as defined in Webster's Dictionary, is "A system of obtaining money or other advantage fraudulently or undeservedly, usually with the outward consent of the victims." That is a very neat and accurate definition of the typical American labor union, and we therefore usually refer to these organizations as rackets rather than unions.

With honest unionism there should be no reasonable complaint, but with unionism organized into nationwide monopolies for the purpose of obtaining benefits fraudulently and undeservedly for its membership, there should be nothing but opposition from thoughtful persons interested in the general welfare of the country. The typical American labor union is not only a racket, but a very dangerous racket, because it is designed to exploit working people for the benefit of the union organization.

When the steel workers, automobile workers, electrical workers, and other monopolistic rackets "undeservedly" obtain by extortion wage increases entirely out of keeping with the capacity of the public to pay, that public is exploited in higher prices for practically every manufactured article.

THE UNION members themselves are often exploited in more ways than one. As an example which has been repeated hundreds or perhaps thousands of times, we can take the case of a concern with which we are acquainted, which was built up from nothing by an able, ambitious, and ener-

Train supervisors, Moffie tells STA's Northern N.C.-Va. group

Staff Report

■ APPROXIMATELY 200 members of the Northern North Carolina - Virginia Division of the Southern Textile Association met at Cooleemee, N. C., November 10, and heard Dr. D. J. Moffie, director of public relations, Hanes Hosiery Mills, discuss what makes a good supervisor.

We must have a practical and realistic view to the problem at hand, and although certain principles may apply, no book can give us all the answers, Dr. Moffie told the group. Supervisory personnel should receive the best training and development efforts because of their key positions. The supervisor usually takes the brunt of it when anything goes wrong, and he should have every advantage in learning to cope with his responsibilities.

Management must take leadership on the offensive, not the defensive. The qualities required for a good supervisor are:

1. Ability to work with people (75% of success depends on this).
2. Know the technological aspects of the job.
3. Must work at becoming or making a good supervisor.
4. Management must set the right climate through correct or good communications to make the supervisor feel that he is a member of the team.

The company benefits from efforts to achieve the goal by selecting the right person to do the job. This can be done by: (1) tests; (2) evaluation; (3) training.

Dr. Moffie

Emphasis should be placed on instruction in human relations, and management must produce a climate to encourage and build good supervisors.

Dr. Moffie cited a survey made to determine who was to blame for the foreman's failure. Management's reasons as tabulated from the survey were as follows:

78% said foreman can't become management minded.

70% said foreman couldn't get workers to become cost-conscious.

38% said foreman had an inferiority feeling.

26% said foreman lacked cooperation.

26% said foreman failed to interpret management directives.

22% said foreman failed to get operators to cooperate.

The foremen's answers to the same question were as follows:

80% said management did not inform the foremen.

68% said management failed to praise when waranted.

38% said management classified everyone as a whole instead of recognizing them as individuals.

34% said management employed on basis of technical qualifications but not otherwise.

28% said management made too many dogmatic decisions.

22% said management "talked down" to supervisors.

In view of such evidence it appears that poor communications exist from management throughout the organization, Dr. Moffie concluded.

New officers elected at the meeting were as follows:

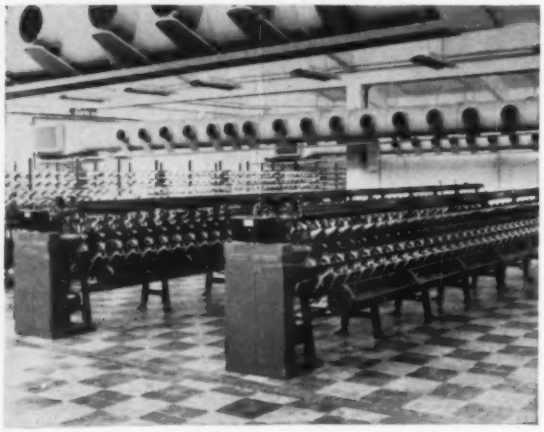
Chairman: Charles Ward, Highland Cotton Mills, High Point, N. C.

Vice-Chairman: H. W. Buchanan, Erlanger Mills, Lexington, N. C.

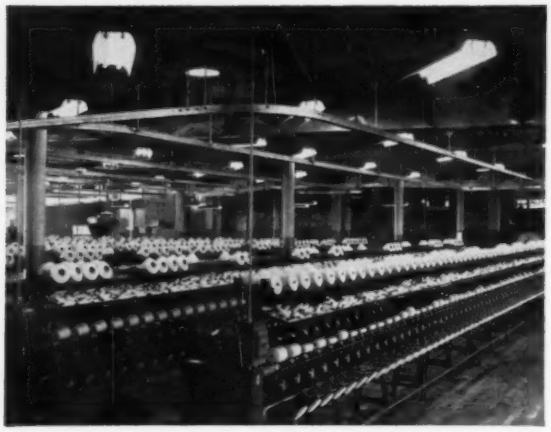
Secretary: Howard Barton, Fieldcrest Mills, Inc., Spray, N. C.

Elected to the executive committee were: Nelson W. Kessell, supt., P. H. Hanes Knitting Co.; Dave E. Sions, supt., Fieldcrest Mills, Inc., Fieldale, Va.; Herman Cone, Cone Mills, Reidsville, N. C.

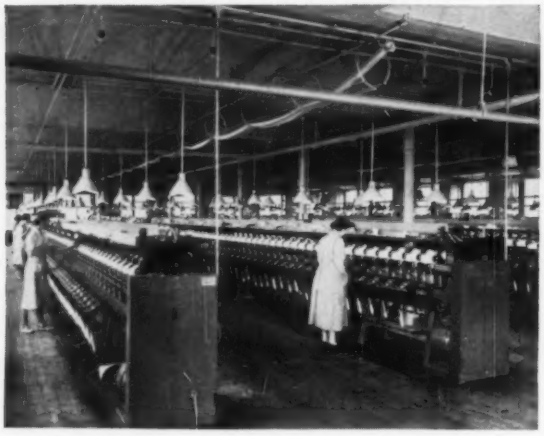
Leesona ROTO-CONER®
—the winding way around the world



URUGUAY — Roto-Coners set up to wind onto paper cones. Machines are equipped with round bobbin boxes.



U. S. A. — Roto-Coners winding parallel tubes on one side, cones on the other.



GREAT BRITAIN — Roto-Coners winding open-wind knitting cones.

FRANCE — Roto-Coners coning 100s — 120s cotton yarn.

Every textile manufacturing country in the world uses Leesona Roto-Coners in quantity.

These quiet, trouble-free drum winders produce every type of open-wind package. They wind onto paper tubes and cones for shipment or knitting . . . onto cork-covered, wood cones for warper creels . . . onto perforated tubes and springs for dyeing . . . onto wood tubes and cones for twisting.

Around the world they wind cottons . . . spun synthetic staples . . . wools . . . worsteds . . . linens . . . blends.

The exclusive *Rotary Traverse* on these machines eliminates all moving parts connected with reciprocating guides — permits high speed, reduces maintenance, and assures uniform packages and top quality yarn.

For facts and figures on why these versatile, dependable machines are popular around the world, write for the illustrated Leesona Roto-Coner booklet.

23.6.14

UNIVERSAL WINDING COMPANY

P. O. BOX 1605, PROVIDENCE 1, R. I.

Sales Offices: Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles
Montreal • Hamilton, Canada

Agents in every principal textile center throughout the world.

getic man.

About five years ago this man realized that if he died with everything he possessed tied up in this company, the confiscatory estate taxes would wreck the business, so he sold it to a nationally known concern. This man had some 500 employees who had repeatedly refused to join the union which had been trying to organize them. We have been told by people living in the town where this company operated that the employees were almost unanimously opposed to the union. The big company which bought this concern was, however, completely unionized, and the workers in the recently purchased plant were offered the harsh alternative of joining the union and paying dues to it, or losing their jobs.

It is utter hypocrisy to contend that these people were not being exploited when they were forced to pay dues for something they considered of no value, or when they had to quit their jobs because the implacable racketeers were determined to get their money or that of somebody else on the same job.

THERE ARE other instances where widely scattered plants are forced by a national strike to follow the dictates of the union. There may be no dissatisfaction on the part of the local employees. They may even be happy and enthusiastic about the local conditions, but they are under the iron discipline of a national racket which is cheerfully willing to sacrifice them to carry out some measures which are designed to benefit the heads of the racket.

It is a well-known fact that very few strikes which are seriously contested have ever paid off, and yet the people that control the labor rackets will call these strikes and gamble with the lives and fortunes of their members to secure themselves in their jobs. If they win the public loses, and frequently the members of their unions also lose. The public always loses. In the recent steel strike we lost a month's production of steel, and the price of steel went up, so the public lost on both counts.

Bobbin balancing reduces twister spindle failure

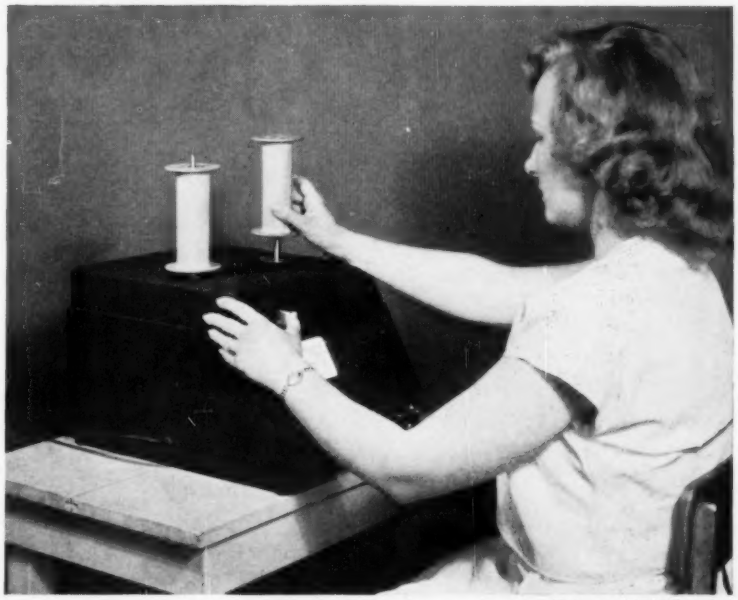
■ MANY twister bobbins now in use were made before the industry became balance conscious; and, while most new bobbins are well balanced, strenuous use and handling may eventually make some of them become spindle vibrators.

One mill had a sizable installation of twisters, using thousands of twister bobbins. Some of the bobbins were causing the spindles to vibrate and wear prematurely. Spindle replacement costs were excessive, and maintenance costs were up.

Power and cleaning costs were also up, and oil thrown by the vibrating spindles was spoiling good yarn.

Investigation by the mill showed that the cost of having all the bobbins rebalanced by a bobbin manufacturer, merely to correct the relatively small percentage of unbalanced units, would just about cancel out whatever advantage might be gained.

Experience shows that even in a mill where unbalance conditions would be considered severe, only one-quarter to one-third of the bobbins cause serious vibration. In most mills, considerably fewer bobbins are unbalanced, but rotation of the unbalanced bobbins from one spindle to another on successive doffs can eventually ruin the whole spindle installation.



Universal Winding Co.

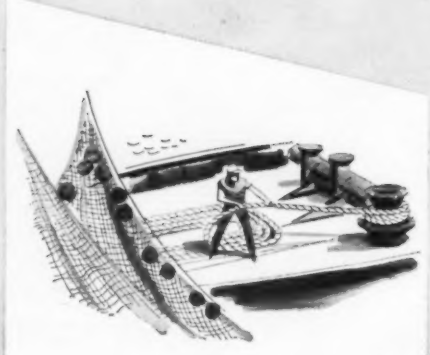
Operator reads the meter indicator for the left-hand spindle of the Leesona Bobbin Balance Indicator while removing an already tested bobbin from the right-hand spindle.

The problem is: how to cull out the relatively few offenders at a reasonable cost? This mill solved the problem with a bobbin balance indicator, on which all the bobbins in the mill were checked at a comparatively small cost.

Then only the bobbins which were out of balance were shipped to the manufacturer for reworking. In this mill all bobbins are checked periodically for balance.

Conveyor Belts

Webbing



Rope

Allied Chemical's

caprolan®

tensile-tough nylon

NYLON HEAVY YARNS

OFFER UNUSUAL TOUGHNESS AND LONG FLEX LIFE IN HEAVY-DUTY INDUSTRIAL FABRICS

Caprolan *tensile-tough* nylon heavy yarns (2000 denier and up) are a completely new yarn class that assures unusual durability and economical performance in such industrial products as duck, webbing, rope and similar constructions.

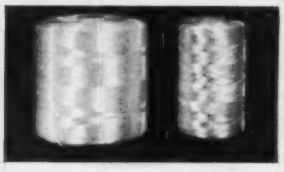
For heavy-duty applications, this new kind of nylon combines toughness, high impact strength, abrasion resistance, long flex life, and — for conveyor belts — excellent troughing qualities.

Where color is desired in nylon, Caprolan also offers a previously unavailable affinity for virtually any class of dyestuff, and can provide quality color rendition of dyes in shorter dye cycles.

Caprolan nylon heavy yarns eliminate the need to ply multiple ends of finer deniers to achieve a higher total effect. They can be engineered as high as 50,000 total denier, according to your specifications, and are put up on a new 30-lb. package as well as on 10-lb. packages.

You will want to look into such Caprolan economies as longer runs between creelings . . . ready dyeability . . . elimination of costly fine denier inventories . . . and the unusual and lasting whiteness of Caprolan that develops no appreciable yellowing in storage.

Caprolan heavy yarns already have been established in many leading mills. For more information or technical assistance, call or write us today.



KNOTLESS 30-LB. AND 10-LB. PACKAGES ON PARALLEL, NON-RETURNABLE TUBES!

Fiber Sales and Service Allied Chemical *National Aniline Division*

261 Madison Avenue, New York City 16, N. Y.

Branch Offices—Jefferson Standard Building, Greensboro, N. C., 200-204 S. Front St., Phil. 6, Pa., 15 Westminster St., Providence 3, R. I.

Executive views

(from page 91)

is perfect, why isn't the finished cloth exactly as represented on the label? In the first place, it is quite possible that many or most are, but we never heard of an acceptable tolerance allowance granted blends, a few percentage points above or below the standard, compared to the recognition of allowable tolerances granted to yarn counts, above or below the standard count, which may vary from 2% up to 5% and which may be acceptable.

If a mill advertises a 12-ounce per yard finished cloth and the actual weight is 12½ ounces per yard, that's their hard luck if they wish to waste stock. If they produce an 11½-ounce cloth, then they may possibly run into conflict with their buyers. However, here is a field of variation (which is in the most part unintentional), seldom deliberately misbranded and, in fact, seldom branded. Most manufacturers have a code of ethics far and above any that the law demands. And that includes blend manufacturers.

WHY SHOULD a tolerance allowance be granted blend manufacturers? We recall an episode which at the time was of great concern to a mill plagued with filling barre in a best selling blend. This was a 60-40 blend—60 per cent dull rayon, 3.00 denier, 2" cut staple; and 40 per cent 58/60s wool. It had the weakest tensile strength of all blended yarns being spun at this mill.

The ends down problem in the spinning was a bad one, and mills that encounter this same problem can probably benefit from the changes this mill made to improve the spinning of this particular blend. To add to the tensile strength of the yarn and improve the ends down problem, the mill changed the 60-40 blend to a 40-20-40 blend, 40 per cent dull rayon as before; 20 per cent dull rayon, 1.50 denier, 2" cut staple; and 40 per cent 58/60s wool. The added fibers in the strand with the addition of the 1.50 denier added greatly to the tensile strength and materially improved the ends down problem. However, it was still a 60-40 rayon-wool blend.

Many tests were undertaken to determine the cause of the filling barre, chiefly noticed in cross-dyed fabrics, and among them were analyses of the percentages of rayon and wool in the finished and also in the unfinished cloth. Though many cross sections of the analyzed cloth showed a close adherence to a 60-40 blend, other tests showed variations up to slightly less than 3 per cent.

The quality control laboratory came up with a "specific gravity" theory at the time, and this theory was given special consideration because the blend waste in the picker room and at the cards, when analyzed, proved conclusively that there was more wool content in the waste than rayon. Anyone can draw his own conclusions, but if the wool content is the heavier fiber, it seems obvious that more of it would drop into the waste than rayon.

The point is, without further ado, that there can be a variation in the percentages, no matter how slight; there is no flexible allowance under the Wool Products Labeling Act, and there should be!

We are not upholding deliberate violaters of the act; we just wonder sometimes how the act operates.

Speaking of labels, let's brand them correctly, if that's what the Federal Trade Commission wants. Why not a petition to the Commission to have all Japanese textile imports into the United States labeled, "Made in Japan — Subsidized By American Taxpayers?"

When the Japanese can buy American cotton cheaper than American mills can, when they can produce cloth at wage rates one - tenth of ours, and when they can export fabrics in quantities limited only by an appraisal of how loudly the textile industry of this country will complain, little wonder we say, "It makes one ponder where reason begins and if in the end, reason will prevail."

Georgia weaving forum

(from page 127)

tem has the capacity to withstand short circuits.

Six of the eight reporting plants have sufficient interrupter capacities; five have sufficient protection against short circuits. Of the remaining three, one gave a definite no to the second part of the question; two were noncommittal.

Power Tools. Of the 14 mills replying to a question dealing with the grounding of auxiliary power tools in excess of 110 volts, such as drills, sanders, etc., nine report grounding. Using a built-in ground wire in the supply cable to connect the frame of the power tool to the ground of the electrical system is the standard procedure reported.

Cold Water Lines. The condensate dripping from cold water pipes in some parts of the mill is corrected in most cases by some form of insulation. Glass fibers, cork, and a magnesia composition seem to the best known types.

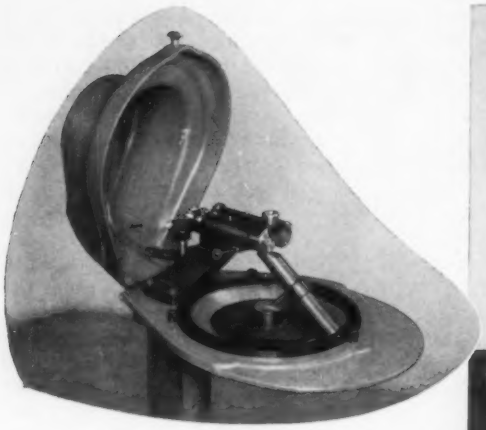
A popular remedy for stopping the dripping from humidifier lines is to raise the temperature of the water in the system until condensation ceases.

Some trouble in *Mill H* was reported in finding suitable insulation for a water line running through the weave room to an air washer. Twice the pipe was insulated; twice the insulation broke down within a few months. A heater installed on the line at a point just before it entered the weave room was the remedy.

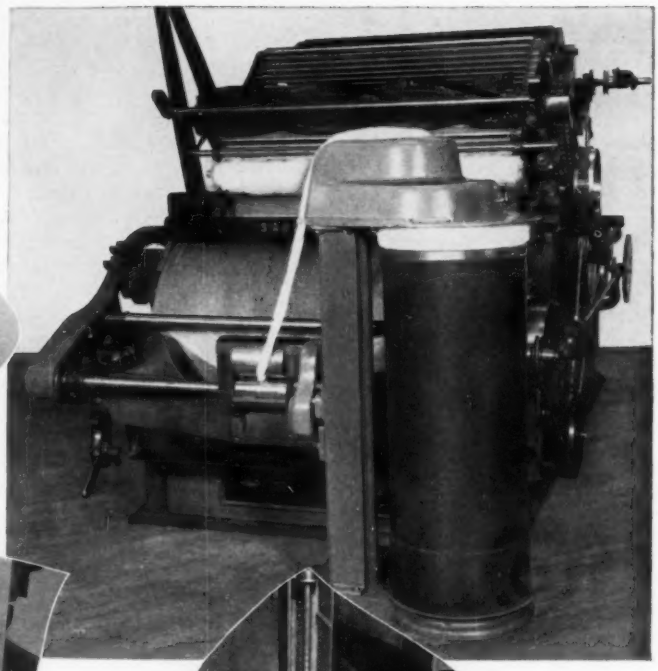
Mill A rerouted some pipes to avoid areas of high humidity and has used foam glass insulation on those pipes not moved.

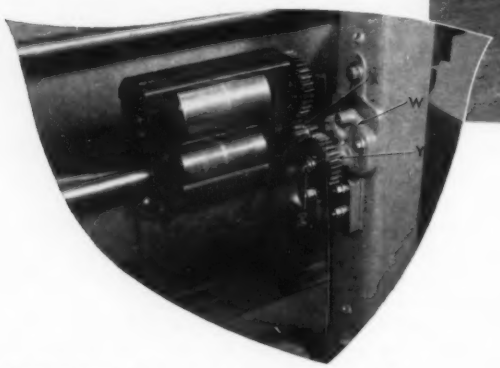
Mill D uses drip pans under supply lines from the city system to carry off the condensate. It is piped from the drip pans to sewer lines. Cold water lines for drinking purposes are insulated. Plumbing and humidifier lines are heated.

(The discussion on slashing will appear in an early issue of Textile Industries.—The Editors)

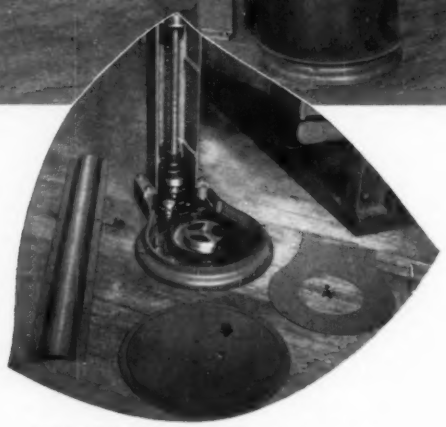


COILER HEAD. Note the clean, simple construction, and streamlined cover. The Calender rolls are mounted on anti-friction bearings.





COILER DRIVE is located close to calender rolls. X is driving gear; Y is driven gear mounted on rugged cannon shaft Z, which is carried in an adjustable bearing W. Shear pin is placed in hub of gear Y — if more than normal pressure develops, pin shears off and prevent damage to gearing.



BASE OF COILER. New type turntable unit makes doffing of large heavy cans much easier because a raised portion engages inside of can rim rather than old method of fitting can inside flange.

SACO-LOWELL 14" TO 18" COILERS

The introduction of large package Coilers, resulting in more sliver yardage per can, has greatly increased productivity per man hour. The "overcenter" lay used by these New Coilers produces a much more uniform pattern in the bottom of the can, thereby preventing sliver tangling which often occurs when a "butting" lay is used. Also, the "overcenter" lay eliminates hard cores, which tend to make stock pyramid in the center of the can.

REDUCE
— LABOR COSTS AS MUCH AS 30% *
— "PIECING UP" AT DRAWING UP TO 50% *
— RE-WORKABLE SLIVER WASTE OVER 50% *

*** Based on actual mill tests.**

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N.C. Sales Offices CHARLOTTE GREENSBORO GREENVILLE ATLANTA

HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editor "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

Thoughts on large package spinning

In the July, 1956, issue of TI, p. 159, CONTRIBUTOR NO. 8876 *called for a discussion of large package spinning. Two replies are printed below. Other comments are invited.—The Editors*

EDITOR TEXTILE INDUSTRIES:

The question on the economics of large package spinning will require lengthy explanation if all avenues of the subject are explored. Usually there are several factors in a weaving mill that influence the amount of yarn put on a spinning bobbin.

The ideal situation would be one in which the ultimate package size is effected in all phases of textile operations. Reaching that ideal consumes most of the efforts of textile management. Most of us appear to be still reaching.

Our sentiment and practice is to put every ounce of material onto a package that can possibly be contained there. We make slight allowances for spooler cycles, and that ends our compromising.

CONTRIBUTOR NO. 8934

EDITOR TEXTILE INDUSTRIES:

At first thought it would seem that the greatest yardage put on the bobbin would give the lowest cost. This probably would be true in some cases, and especially true if only one yarn count were being run. But if the conditions are such as we have (a dozen yarn counts) this does not hold true.

For example: We process our warp (Gwaltney spinning) yarns on two Barber-Colman Type D spoolers. The travelers on these spoolers run continuously, making a round, let us say, every four minutes.

This means that the traveler passes a given bobbin pocket once each four minutes, and the yarn on that bobbin should be exhausted in a multiple of approximately four minutes. If this is true, then the packages will be replaced and the winding started on the new package with a minimum of delay.

Now let us suppose that the spinning package will last 11 minutes and 45 seconds in the spooler; and that it is found that the running time on the spinning frame can be increased to 12 minutes and 15 seconds. This added yarn will represent, let us say, an extra hour of spinning time. Adding the extra hour to the doffing

Win $100 HURRY! HURRY HURRY! **Win $100**

Kink Contest Closes December 15, 1956. Send Your Entry Now!

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made to the winner as soon as all entries are judged.

The contest rules are simple:

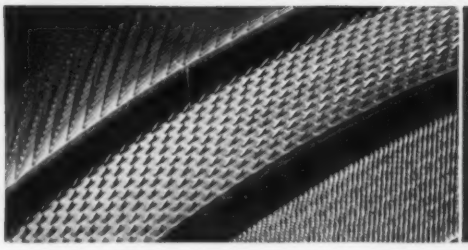
► All contributions must be postmarked not later than midnight, December 15, 1956.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to:
Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.



Ashworth Tips ON CARDING

No. 36 in a Series

FILLET LENGTHS

Fillet lengths for rolls of various diameters and widths have been more or less standardized by card clothing manufacturers, who have taken into account such variables as the difference in the type of tension apparatus, its distance from the roll being clothed, and the probable stretch of the fillet. As a consequence, given the dimensions of any roll on a woolen or worsted card, the manufacturer of the clothing can be depended upon to furnish an adequate length of fillet, with due allowance for tapers and for the excess footage required to maintain tension as the finishing taper is being drawn on.

Many formulas have been devised to figure fillet lengths. One frequently used adds the width of the fillet to the length of the roll, multiplying this sum by the roll's circumference and dividing the result by the product of the fillet's width multiplied by 12 (inches per foot). It would be expressed as follows, with "D" representing the diameter of the roll, "L" its length, "W" the width of the fillet, and assuming the roll to be a 60 x 60 cylinder:—

$$\frac{D \times (L\text{-}W) \times 3.1416}{W \times 12''} \text{ or } \frac{60 \times 62 \times 3.1416}{2 \times 12} = 486.9 \text{ feet}$$

This formula allows for material discarded when tapers are cut, but may provide a fillet of insufficient length to be properly held under tension as the last wrap is being drawn on where rolls 6 inches or less in diameter are involved on cards in the narrower widths.

Another, and perhaps a better, method employs a constant as a substitute for factors appearing in the formula given above, such as the value of Pi (3.1416) and the number of inches per foot. It also makes use of a flat allowance of 3½% for tapers, etc. With "LF" representing the fillet length, "D" the diameter of the roll, "L" its length, "W" the width of the fillet, and making use of the constant (.271), the equation would be as follows:—

$$\frac{D \times L \times .271}{W} = LF$$

Applying the formula to figuring the length of fillet required for a 60 x 60 cylinder, for example, it would appear as:—

$$\frac{60 \times 60 \times .271}{2} = 487.8, \text{ or } 488 \text{ feet}$$

Here again, however, rolls of small diameter require a longer fillet than would be provided if the use of the constant (.271) is strictly adhered to.

Either of the two above mentioned methods arrives at a figure reasonably close to the footage the card clothing manufacturer will furnish for rolls four inches and over in diameter on cards that are sixty inches or more in width. They will also serve where rolls that are ten inches and larger in diameter are involved on cards forty eight to fifty four inches wide.

Either method will also apply in the case of rolls of small diameter on cards in the narrower widths, with respect to the length necessary for full coverage, but an extra allowance must be made to assure that tension will be maintained when preparing or fitting the finishing tail end. As the roll diameters decrease, this allowance increases. Accordingly, specifications relating to the appropriate length of fillet for small workers, strippers, etc., can be safely left to the manufacturer of the clothing. The mill, however, should be sure that the size given as the diameter is a calipered dimension and taken over the bare surface of the roll.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Paules, Representative — Los Angeles, Calif.
*Factory †Repair Shop ‡Distributing Point
3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

NOTE: All rights reserved. Reprints, free of charge, on request to Ashworth Bros., Inc., Fall River, Mass.

Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

cycle will make the spinning efficiency look good, but it will break into the spooler production.

With the added amount of yarn on the spinning bobbin the spooler spindle for that bobbin will be forced to wait 3 minutes and 45 seconds before it can be tied up and started. The reduction in spooler production from that increased yardage amounts to approximately 30%. The gain in spinning production amounts to a mere fraction of the loss in spooler production.

In running on a single warp count it would be possible to set up the spoolers to take off any amount of yarn from the largest of spinning packages. But as we are faced with a multitude of counts, to buy the spindles necessary to take care of all combinations would be prohibitive in cost. Furthermore it is doubtful that with the present design of spooling equipment, a one-count mill would ever be free of having to adjust spinning yardages to some extent.

CONTRIBUTOR No. 8935

Stops heavy filling ballooning

EDITOR TEXTILE INDUSTRIES:

In running a very heavy cloth 61″ wide on a 76″ loom we were plagued with the filling yarn ballooning on the magazine side, catching on the cutter arm, and stopping on the fork on the next pick. The shuttle tension was difficult to control; too much of it caused tight picks (even with a crow hop device the tight picks are likely to cause uneven selvages). The filling had to be run somewhat loose in the shuttle eye.

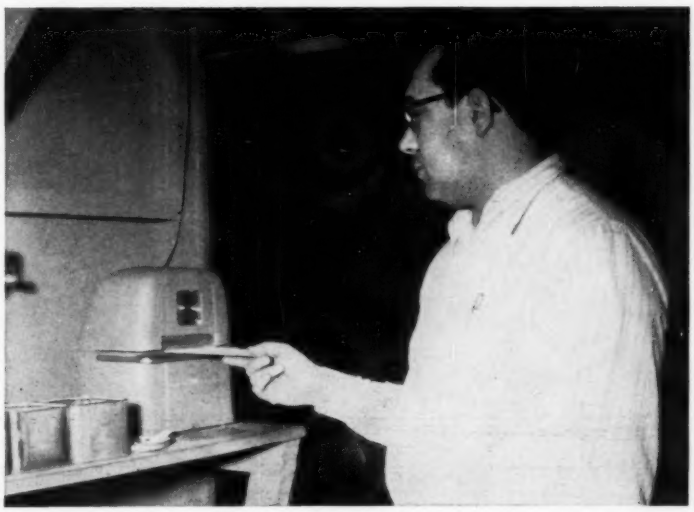
Note in this photo the two picks of filling as they are trapped above and below the binder spring waiting to be cut.

We bent a Draper XD binder spring into a spoon shape on the small end and mounted it on the breast beam between the magazine and the edge of the cloth on that side. We moved the reed just far enough to allow the tip of the spring to pass through the reed position when the lay is on front center.

With the spoon shaped end turned up 3/8″, and that tip mounted to clear the top of the race plate with a minimum of space, the filling yarn goes under the spring as the shuttle enters the magazine.

When the magazine changes, the outgoing end is held under the spring by the action of the cutter, while the end from the new quill is allowed to pass over the top of the spring. Thus the ends cross about the spring and are held tight in this position until the temple cutter severs the two ends. The yarn cannot rise above the spring position to catch on anything.

CONTRIBUTOR No. 8939



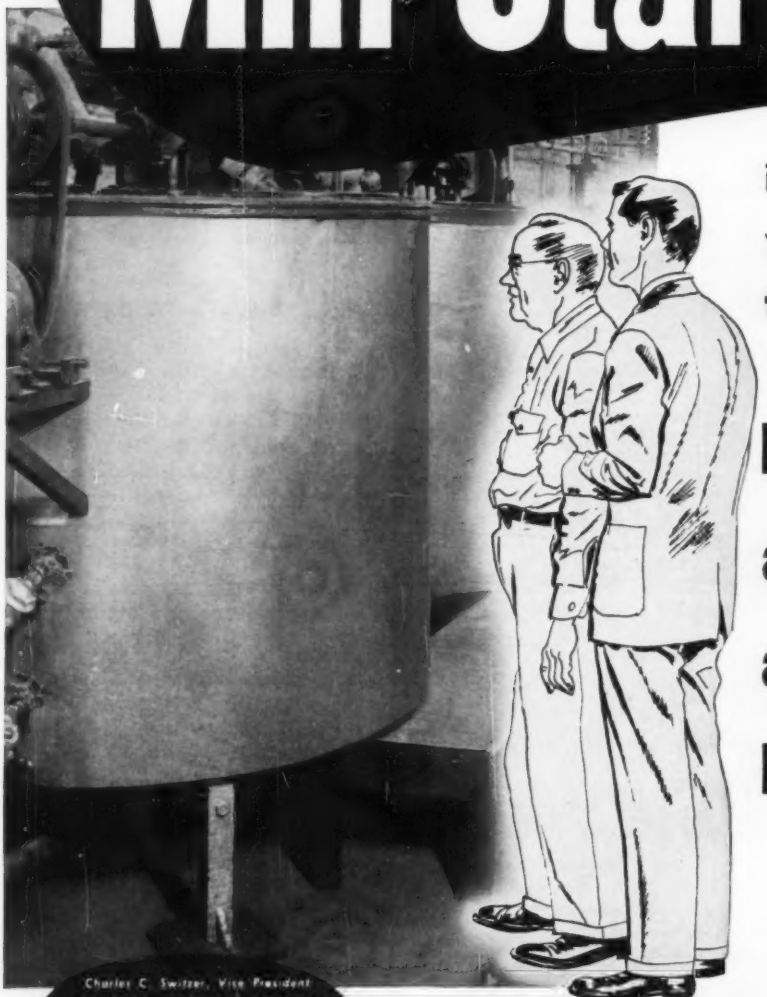
Quality control device for hosiery dyeing

So as to properly regulate and check dyeing cycles on its dyeing operation, the Garnet Hosiery Finishing Co., Inc., Allentown, Pa., has installed this IBM time imprinting machine in the drug room.

As dyers start and finish a lot, they "punch in" or "punch out" directly on the work card. The cards are later checked against known standard time cycles for the particular dye lots being run.—*Staff.*

VICTOR Mill Starch

A KEESTAR PRODUCT



is the weaver's friend ...

because it's always uniform and backed by Keever Service

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1200 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

Processors of corn, wheat and blended starches for industry since 1898

HOW OTHER MEN MANAGE

Eliminate time jumping on W-3 looms

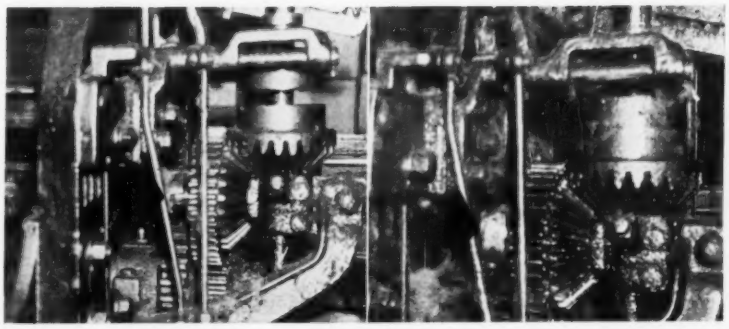
EDITOR TEXTILE INDUSTRIES:

Our W-3 looms are equipped with a bottom bevel gear which controls the box timing. The gear fits on a shaft which is held by a bracket on the loom frame.

This bracket is notched to receive two tongues on the bevel gear when it is necessary to change the box timing. This is done by matching the tongues with the notches to make it possible to slip the bottom bevel gear out of mesh with the gear on the upright shaft. This shaft must be turned if the timing is to be changed.

Ordinarily the notches are plugged with pieces of leather during running. The leather, however, dries out and sometimes shrinks until it falls out of the notches. When this happens the gear is able to drift out of time.

We corrected this condition at our plant by preparing a small metal clip which we placed over the notches in the bracket to hold the leather plugs in place. The shaft set screw in the bracket holds the clips.



Arrows point to the notches (left) and to the clip mounted under the bracket set screw (right) to hold the leather plugs in place. Mild steel can be used to form the clip which works best if curved to conform to the diameter of the bracket.

In later loom models this has been corrected through a change in design, but those mills still using the old models will find this kink useful.

CONTRIBUTOR No. 8885

Mr. Carder, how do you overcome this problem?

EDITOR TEXTILE INDUSTRIES:

Our plant is equipped essentially with H&B cards. While most of them do a good carding job, a few of them resist all our efforts to limit the amount of fly they blow out around the cylinder ends. The loose stock builds up between the cylinder ends and the frame sides and must be removed periodically.

I have discussed the condition with several mill men and have acted on their suggestions without any success. The fly still blows.

Are you familiar with the problem; and can you direct me to mill men who have had the same trouble and who have come up with a solution?

CONTRIBUTOR No. 8936

● *This inquiry was directed to sources of information. One reply is printed here. If you have a suggestion to offer, address your reply to this magazine. Letters published will be paid for at regular space rates.—The Editors*

EDITOR TEXTILE INDUSTRIES:

My experience with fly or fiber blowing out the sides of cards leads me to believe that any make of card will do the same thing. The trouble I have run into generally sprang from screen settings.

On the Howard and Bullough card there are three separate screens—one at the front, one at the back, and one at the licker-in. Each screen works independently of the others.

Grinders must exercise great care in installing, removing, or otherwise handling card screens. It is easy to force them out of their circular alignment. I have seen new screens, and screens delivered to metal shops for repairs, arrive at the mill with this defect already in them.

Of course when this happens the grinder cannot get a "level" setting. When this occurs the screen will be in a strain, or bind, and resist the grinder's efforts to obtain a perfectly uniform setting. Where the warped portion of the screen is involved, the air currents set up by the cylinder will move diagonally across the screen to the side with the widest setting. Wherever the current flows it carries the stock with it.

Thus it is that the grinders must obtain a level setting from side to side. If there are high ribs in the screen these too will divert the air current from its correct path.

A suggested procedure is to have the machine shop build a jig for checking the correctness of curvature of the faulty screens. Once the grinders are accustomed to handling the system, it will pay great dividends in stock salvage.

CONTRIBUTOR No. 8937

Does chelation actually represent a new kind of chemistry? Are the possibilities as exciting as many seem to think? This series endeavors to answer these—and many other—pertinent questions on this fascinating subject. It is hoped chemists, engineers and purchasing agents alike will find these answers helpful. Now on to . . .

DOW

The Chemistry of Chelation: Part II

Versene and Versenol Series · Descriptions and Uses
A measure of Value · A Suggestion

To review in capsule form: Part I introduced chelation, offered examples of typical chemical reactions, applications, and discussed future possibilities. You will remember that a chelating agent is defined as a chemical which surrounds metallic ions with a multiple-ring structure that keeps the metal chemically inactive and holds it in solution. The applications in industry are many—and new ones are being found almost daily. That, of course, brings us to another consideration: different chelating agents for different uses.

VERSENE® AND VERSENOL®

Chelating agents are commercially available from Dow as 15 different products—all based on aminocarboxylic acid derivatives. Among these, wide spectrum performance is shown by two series of products. The Versene series of products (Versene® 67, Versene 100, Versene Powder, Versene Beads, Versene 9 and Versene Acid) is based on EDTA* and the sodium salts of this material. The Versenol series (Versenol® 120, Versenol Powder and Versenol Beads) consists of various physical forms of Na_3 HEDTA**. The Versene series, except for Fe+++ in the alkaline pH range, is generally the stronger series of the two (more completely chelates the last traces of metal). The Versenol series is notably stronger for Fe+++ in the mildly alkaline pH range and is usually cheaper on a performance basis if the consumer can tolerate the weaker chelate structure. Versene is the strongest, most stable commercially available chelating agent. It is the one with the greatest number of successful applications.

DESCRIPTIONS AND USES

Here are three Dow chelating agents together with their descriptions and uses:

Versene 100 is a concentrated aqueous solution of a technical grade of the tetrasodium salt of EDTA . . . widely used in textile processing, detergent formulations and metal cleaning.

Versene Acid is a dry form of EDTA technical. It is used in many operations as a raw material for the preparation of various derivatives, such as metal chelates, salts (K, NH_4). esters and many others.

Versenol 120 is a concentrated aqueous solution of a technical grade of Na_3 HEDTA. It is also very valuable to detergent, textile and metal-cleaning processes.

Naturally these three specific agents are not the answer to *every* problem. That's the reason for the many other Versene products, to be discussed in Part III.

A MEASURE OF VALUE

A measure of the broad performance capacity of a chelating agent can be obtained from its *chelation value*—determined on a reference metal. Calcium is used as the reference metal under the standard test proceedure accepted by the industry. Dow prefers this "performance basis". It specifies more clearly what chelating agents *actually accomplish* than such terms as "% solids" and "% active". Consequently, the "100" in Versene 100 means that one gram of this product will chelate 100 milligrams of calcium carbonate in accordance with the standard test procedure. By the same token, one gram of Versene 67 will chelate 67 milligrams, and so on.

A SUGGESTION

Two closing thoughts: Dow wants to help in any way possible to further develop the applications for chelation. Also important, Dow would like to hear from *you*—your thoughts, reactions, suggestions. Please inquire about any problems or ideas you may have. Information or actual technical assistance will be forthcoming promptly. Write, on your company letterhead, to Technical Service and Development, Dept. SC 912L-1, THE DOW CHEMICAL COMPANY, Midland, Michigan.

*Ethylenediaminetetra acetic acid

**Trisodium salt of N-hydroxyethylethylenediaminetriacetic acid

ADDITIONAL TOPICS IN THIS SERIES

PART III — Specific chelating agents for specific applications (agent for iron control depends on pH—Versene Fe-3 Specific® for iron and transition metals on the alkaline side, Versene T® for iron in presence of free caustic—other solutions to special problems).

PART IV — Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and Kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

you can depend on DOW CHEMICALS

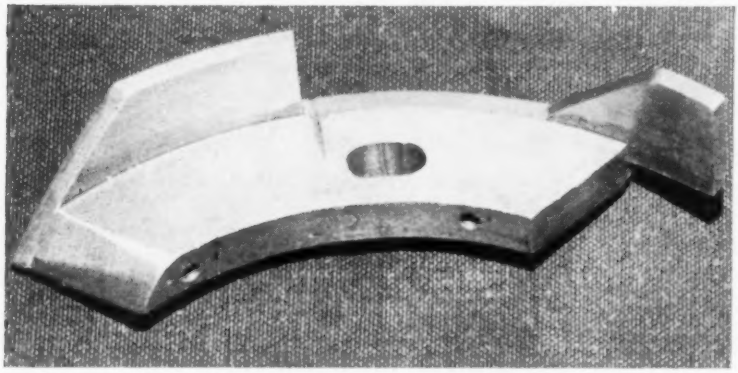
DOW

Cam shifts hosiery knitter to high speed

EDITOR TEXTILE INDUSTRIES:

A shipper cam which shifts the driving belt on circular knitting machines (SCP and SCOP) to high speed pulley while knitting the looper clip and top is a worthwhile improvement. A hole is already present on the machine to serve in fastening the part on securely.

The cam (see accompanying illustration) cuts costs by increasing production an average of ten to twelve socks per day on machines which normally produce about three dozen pairs per shift.



CONTRIBUTOR No. 8925

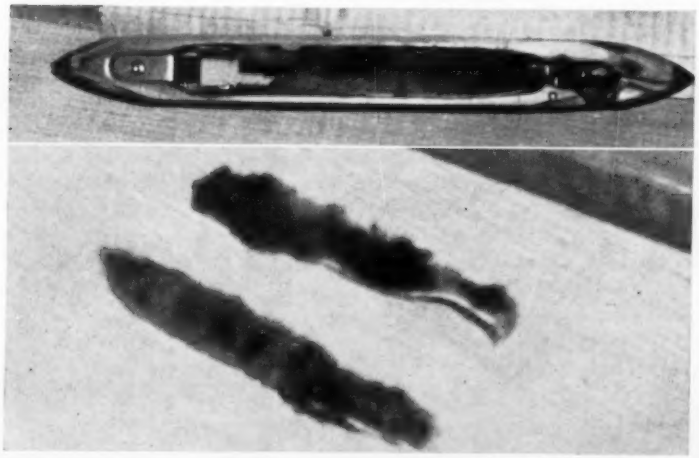
Put fur around filling feeler slot

EDITOR TEXTILE INDUSTRIES:

Quite often heavy yarns will stop on the fork when the package unwinds down to the filling fork slot. Hard twist yarns often do the same.

We stop this hanging by gluing two thin strips of fur in the shuttle above and below the filling feeler slot. The fur gives us uniform tension as the filling unwinds from tip to butt.

CONTRIBUTOR No. 8874



Streaks in pile fabrics

EDITOR TEXTILE INDUSTRIES:

An ever-recurring fault—in pile fabrics particularly—when using stippled yarns (yarns with different colored singles) is stripiness. This is generally ascribed to insufficient turns in the yarn, uneven twist, or the coincidence of pile wire cutting edge with the identical positions of colors over a number of rows, so aligning colors in a stripe effect (this applies of course to pile fabrics).

We found our troubles were mostly caused by loose ends where the yarn had raveled 10″ or 12″. In tying knots, for instance, a length of say 20″ of yarn would be made where the color singles lie almost parallel.

We asked all operatives (twisters, winders, beamers, weavers) handling the yarn to put a little twist into all loose yarn ends before tying knots, etc. This simple direction has prevented all obvious effects of stripiness. The occasional odd stripes due to other causes do not matter, being unnoticeable to unpractised eyes.

CONTRIBUTOR No. 8938
(England)

Traverse grinder speeds

EDITOR TEXTILE INDUSTRIES:

There is something pertaining to card grinding in almost all textile publications. From reading such articles I have deduced that not enough attention is given to the art of grinding cards. Being an old card grinder (from the standpoint of experience) I should like to give my views on the subject.

A properly ground card will stay sharp around the clock until the

(Continued on page 158)

What you should know

What is CMC Warp Size?

CMC Warp Size is a water-soluble product made from cellulose, and is a true film-forming material which gives a smooth, tough, flexible surface on warp yarn with a minimum add-on.

Why use CMC Warp Size?

Starch, used traditionally, is a good sizing agent. Why, then, consider a change to CMC Warp Size? Because:

1. It reduces steam pollution. CMC Warp Size is sufficiently resistant to bacterial attack so that it adds virtually nothing to the overall B.O.D. (biological oxygen demand) resulting from desizing wastes. In mixtures with starch the protection of the CMC Warp Size film acts to retard oxidation of the starch. In such mixtures the actual B.O.D. is suppressed to an amount below that which would be expected from the starch alone.

2. Smaller amounts of size are required. Formulas containing two parts of starch and one part of CMC Warp Size are being successfully used at an add-on of 7.0 to 7.5% of the yarn weight. Excellent adhesion and superior film-forming properties make such a low add-on possible.

3. It can be desized without enzymes. Since CMC Warp Size is soluble in cold water, it can be easily washed off without costly and time-consuming enzyme desizing. Mixtures with starch containing two parts of starch and one part of CMC Warp Size can be removed by a mild alkaline wash.

4. It forms more uniform solutions. CMC Warp Size is odorless and soluble in cold water. Viscosity changes little on prolonged stirring; solutions are stable, leading to greater flexibility in scheduling. It does not mold, ferment, or form skins. Equipment is more easily cleaned.

5. It allows lower weave-room humidities. CMC Warp Size has been successfully employed at humidities ranging from 75 to 85%. Lower humidity increases to weave-room comfort, cleanliness, and ease of maintenance.

6. It reduces shedding. High film adhesion and flexibility of CMC Warp Size greatly reduces the amount of size powdering at the split rods of the slasher. It also reduces shedding of size and fibers during weaving, thereby lowering loom-cleaning time.

How much can CMC Warp Size reduce stream pollution?

In many finishing plants, stream pollution due to starch desizing operations accounts for 50-70% of the total sewage load. In a starch-CMC Warp Size mixture the B.O.D. is theoretically proportional to the amount of starch present. In actual mill practice the suppressing effect of CMC Warp Size in a 2-to-1 starch-CMC Warp Size mixture has resulted in a 70-85% reduction in B.O.D. resulting from desizing.

How does CMC Warp Size affect weaving performance?

In actual mill operations starch-CMC Warp Size compositions have been shown to be equivalent to, or superior to, starch. With low-sley fabrics, reduction in warp stops and increases in weaving efficiencies were most marked.

The following tables show some of the improvements in weaving performance which have been observed in actual mill experience.

How does the cost of CMC Warp Size compare with regular Starch?

The cost of the starch-CMC Warp Size combination is comparable to that of straight starch, due to the lower add-on necessary. Savings are also realized in the elimination of enzyme desizing and reduced water and steam requirements. The usual starch formula, including cost of additives, costs about 8.5¢ per pound of size. Starch-CMC Warp Size combination costs about the same as regular starch when used at the suggested add-on of 7.0-7.5%. This is shown in detail in Table 4. These cost computations were based on the equation:

$$\text{Cost/100 lbs. of Yarn} = \frac{100\ (\text{Total Extract-Blank})}{100 - \text{Total Extract}} \times \text{Cost/lb. of Size using current market prices.}$$

about CMC Warp Size

TABLE 1

REDUCTION IN WARP STOPS ACHIEVED WITH CMC WARP SIZE

Study* No.	1,000 Picks Studied	WARP STOPS** Starch	WARP STOPS** 2:1 Starch: CMC Warp Size	Decrease in Warp Stops
1	23,600	0.029	0.024	17%
2	27,100	0.028	0.022	21%
3	15,900	0.025	0.025	—
4	13,600	0.027	0.025	7%
5	8,200	0.035	0.027	23%
6	7,200	0.035	0.031	11%

*Studies 1 through 5: 21s carded yarn, 128-count wide sheeting; Starch add-on: 12.5%. Starch: CMC Warp Size add-on: 8.0%
Study 6: 34s combed yarn, 180-count wide sheeting; Starch add-on: 13.5%. Starch: CMC Warp Size add-on: 8.5%

**Stops per 1,000 picks per 1,000 ends. Includes only those warp stops which could be affected by size, i.e., front stops, back stops, matups, and loose ends.

TABLE 2

RELATIVE EFFICIENCIES WITH STARCH AND 2:1 STARCH: CMC WARP SIZE AT 85% RELATIVE HUMIDITY

Sized With	No. of Looms Checked	RELATIVE EFFICIENCIES* 1st Week	RELATIVE EFFICIENCIES* 2nd Week
Starch	65	98.4	98.7
2:1 Starch: CMC Warp Size	53	98.6	99.8

*Per cent of established standard efficiency:
Starch add-on: 13.0-13.5%
2:1 Starch: CMC Warp Size add-on: 8.0-8.5%
Fabric woven: 180-count wide sheeting using 34s combed yarn.
Checks made over 2-week period when CMC Warp Size was first being introduced into mill.

TABLE 3

RELATIVE EFFICIENCIES WITH STARCH AND 2:1 STARCH: CMC WARP SIZE AT 80% RELATIVE HUMIDITY

Test No.	100% STARCH No. of Looms	100% STARCH Relative Efficiency*	2:1 STARCH: CMC WARP SIZE No. of Looms	2:1 STARCH: CMC WARP SIZE Relative Efficiency*
1	23	0.993	35	0.986
2	12	0.958	29	0.990
3	53	1.020	70	1.050
4	14	0.972	27	1.005
Average	102	1.000	161	1.018

*Per cent of established standard efficiency:
Starch add-on: 13.0-13.5%
2:1 Starch: CMC Warp Size add-on: 8.0-8.5%
Fabric woven: 180-count wide sheeting using 34s combed yarn.

TABLE 4

WARP SIZE FORMULATION COSTS

Cost/100 lbs. of Unsized Yarn At Add-on* Of:	SIZE FORMULA Regular Starch	SIZE FORMULA 2:1 Starch: CMC Warp Size	SIZE FORMULA 100% CMC Warp Size
3.0			1.09
3.5			1.27
4.0			1.46
4.5			1.65
5.5		1.01	
6.0		1.11	
6.5		1.21	
7.0		1.31	
7.5		1.41	
8.0		1.51	
8.5		1.61	
9.0		1.72	
10.0			
11.0	1.10		
12.0	1.21		
13.0	1.33		
14.0	1.45		

*Add-on is in % of sized yarn.

How can you adapt CMC Warp Size to your process?

Working in collaboration with a Hercules technical representative is the simplest and easiest way to develop a program that will make best use of all the advantages offered by CMC Warp Size. He's as close to you as your telephone. Just call or write:

Virginia Cellulose Department

HERCULES POWDER COMPANY

INCORPORATED

903 Market Street, Wilmington 99, Delaware

VT56-2

(Continued from page 155)

cycle is repeated, providing the card surface is kept free of rubbing by the flats, and cylinder and doffer contacting each other. In grinding all numbers of wire from 80 to 130, I have found that the speed of the traverse grinding rolls is the secret of grinding.

A speed of 650 rpm will polish the surface of the wire and give it a fine needle point in about 3 hours. This point will last about 3 days; after that time the surface of the wire will be as dull as it was the day the grinder put the rolls on the card.

I have found the best speed of the traverse roll to be 525 rpm. This speed eliminates the polishing effect on the points, and gives the surface of the wire a rough effect.

Also I recommend that the doffer speed be 35 to 40 rpm, which eliminates the checkerboard effect on the doffer clothing. To get these speeds on the doffer, use an 8″ pulley on the licker-in side that pulls the doffer, and a large enough production gear to get the doffer speed up to 35 rpm. Use a 5¾″ or 6″ pulley on the traverse rolls to get the speed of the traverse up to 525 rpm.

This kind of grinding will gradually improve the carding until the desired effects are reached. Usually this comes about after three or four grindings.

However, so as not to hook the wire, pull down on the grinding rolls gently — pull down until several sparks appear across the cylinder face. Do not spark the doffer — it usually does not get as dull as does the cylinder. Use a 5″ pulley to slow down the drum grinder.

In order to use a slow doffer speed of 35 to 40 rpm, leave the licker-in belted up. This will cause no damage as the licker-in will be running backward. Simply uncross the doffer belt and run it straight.

On H&B cards the doffer belt should be crossed.

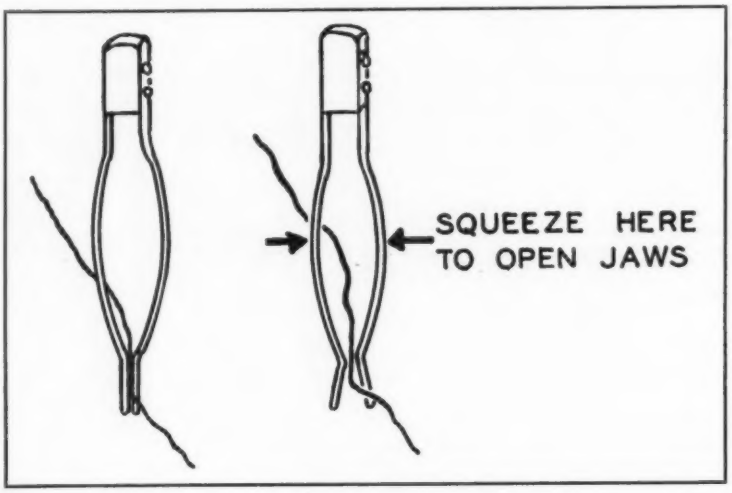
CONTRIBUTOR NO. 8927

Use tweezers to thread Helanca

EDITOR TEXTILE INDUSTRIES:

Threading Helanca on winders or knitting machines necessitates the use of aids such as cotton yarn, wax, plastic hardeners, etc., to assist the totally relaxed Helanca yarn through thread guides. The accompanying sketch shows some tweezers I have developed to thread Helanca.

A watch spring 3/32″ wide is used for the sides of the tweezers. When formed properly the sides permit the jaws to hold the yarn securely until the tweezers are thrust through an eyelet. The pressure of the eyelet on the spring sides forces open the jaws to release the yarn. In case the eyelet is too large, finger pressure will do the releasing. One hand is always free to pull the yarn through after it is released.



CONTRIBUTOR NO. 8898

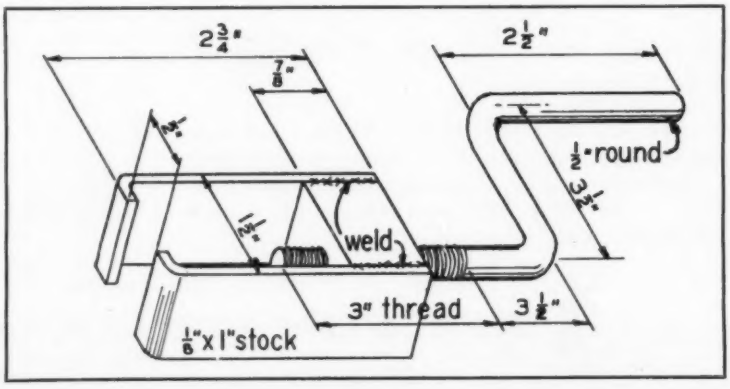
Loom picker puller saves time

EDITOR TEXTILE INDUSTRIES:

The picker puller we use does not damage the picker or the stick.

The accompanying drawing of the puller is self-explanatory.

CONTRIBUTOR NO. 8892



The most recent addition to our manufacturing facilities—
this completely new chemical plant at Fair Lawn, New Jersey.

Sandoz expert application research helps make your work simpler. Sandoz quality chemicals and basic research help keep your production at a high standard.
Sandoz Chemical Works, Inc.

For a look at one of our newest offerings, turn the page

Sandopan DTC... the result of a striking advance in detergent research

It combines the best properties of anionic soaps with the most favorable characteristics of non-ionic detergents, and eliminates their respective drawbacks. It shows strong detergency, powerful wetting and excellent stability. It offers specific advantages in the processing of cotton, wool, rayon, and synthetics.

Sandopan DTC® speeds up desizing. Compatible with all enzymes used in the desizing bath, it assures rapid and uniform penetration and is of substantial help in subsequent washing operations.

Sandopan DTC improves kier-boiling or continuous boil-off. Stable to caustic soda under kier-boiling conditions, it gives instantaneous wetting and prevents channeling of caustic soda liquor. Speeds hydrolysis of wax, protein and pectin, and prevents redeposition of impurities. Added to caustic saturator, it assures a uniform and complete boil-off.

Sandopan DTC substantially increases absorbency. A small amount of Sandopan DTC results in a remarkably high degree of absorbency. Improved absorbency results in better resin pick-up. This, in turn, results in better shrinkage control and crease resistance.

Sandopan DTC steps up bleaching efficiency. Chemically stable to all commonly used bleaching agents, it assures a uniform bleach. Due to better utilization of the bleaching material, any one of the following advantages may be secured:

1 better bleaching in equal time at equal cost.
2 equal bleaching in equal time at lower cost.
3 equal bleaching in shorter time at equal cost.

Sandopan DTC is effective for scouring of synthetics. Results are highly satisfactory on the newer synthetic fibers and it has been of great help in scouring knitwear, tricot and lace.

Sandopan DTC, used with acetate colors, is an excellent dispersing agent and dyeing assistant.

Sandopan DTC gives excellent results in soaping off. It is quick acting in soaping off vats and naphthols. Due to its high suspending power and strong detergency, it is ideally suited for soaping off prints.

If you are troubled by poor rinsability in your goods, or lack of lime stability, by corrosiveness or by stream pollution due to the detergent or soap now being used, look to Sandopan DTC for an answer to your problem. Write or phone Sandoz today for a new, 40-page booklet on Sandopan DTC and a sample for testing. SANDOZ CHEMICAL WORKS, INC., 61-63 Van Dam Street, New York 13, N. Y. ALgonquin 5-1700.

SANDOZ

SANDOZ THINKS AHEAD WITH TEXTILES

Nylon for Carpeting.....!

WHY?

HERE'S WHY:

1. **Permanent Textures.** More *permanent* than wool, cotton or rayon.
2. **Cleanable.** Nylon is an easy-to-care-for fiber. The round, smooth nylon fibers prevent dirt from clinging May be spot-cleaned and shampooed Dries quickly
3. **Resists Abrasion and Scuffing.** Will outwear comparable carpeting made from *any other* fiber
4. **Resists Crushing and Matting.** More crush resistance and less matting than comparable wool, rayon or cotton floor coverings in service.
5. **More Resilient.** More resilient than comparable wool, rayon or cotton floor coverings after continued usage.
6. **Economical.** The strongest and toughest of all carpet fibers, nylon will outwear comparable wool and rayon fabrics, thus be actually less expensive in the long run.
7. **Mothproof, Insect-Resistant.** Never a worry about moths! Carpet beetles cannot attack nylon carpeting.
8. **Decorator Colors.** Nylon can be dyed in lasting colors and an attractive range of shades.

Any reliable manufacturer can deliver these benefits in carpeting made from 100% IRC nylon. In addition, manufacturers can, and are delivering nylon blends in superior carpeting which features many of the pluses listed above.

Nylon offers the carpeting industry positive performance characteristics that add up to true value for the consumer.

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION, Sales Offices: 500 Fifth Avenue, New York 36, N. Y. • 627 Guilford Building, Greensboro, N.C.

Give Your Production a Lift . . .

The extra strength of Textile Spring-Beard Needles means increased production, less down-time and lower reneedling cost. And the right combination of strength and flexibility means Textile Needles hold their straightness and shape, even with constant flexing on today's high-speed machines. To keep quality up, costs down, standardize on Textile Spring-Beard Needles, flat stock and leaded assemblies.

Textile SPRING-BEARD NEEDLES

Nearly every competitive advantage starts with the machine

Wire Products Division
TEXTILE MACHINE WORKS • READING • PENNA.
In the South: Asheboro, N.C. In the North: Manchester, N.H.
Builders of Textile Machinery Since 1900

Knitting Section

now scour and dye in

One Bath

with

FANCO SCOURLON
FANCO PENTALON

Fancourt's new Scourlon-Pentalon one-bath technique drastically reduces processing time and cost.

- It gives you clean, even, level dyeing with good unions.
- It assures high quality, easier-to-sell hosiery.
- Scourlon is a speedy, effective detergent for removing soil, waxes and oils from nylons.
- Pentalon assists dyestuffs to disperse, penetrate and level.

For complete information on Fancourt's new Scourlon-Pentalon one-bath technique call or write Fancourt today.

SCOURLON is an alkaline, buffered-powdered detergent with safe, high-capacity powers to remove soil, waxes and oils from nylon.

PENTALON is a clear amber liquid possessing high dispersing, penetrating, and leveling action with dyestuffs.

W. F. FANCOURT CO.
518 SOUTH DELAWARE AVE.
PHILADELPHIA 47, PA.

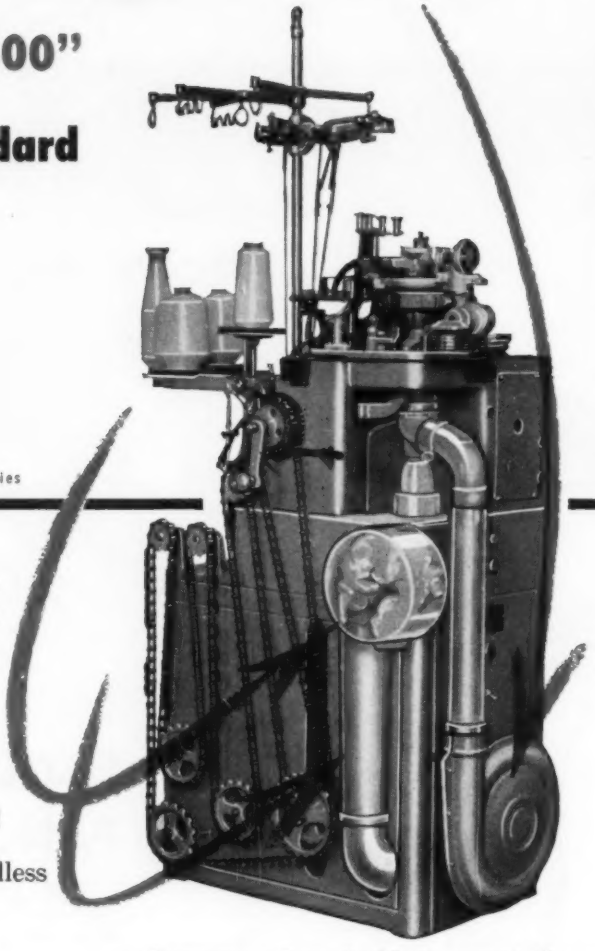
SOLVING FINISHING PROBLEMS SINCE 1904

SOUTHERN OFFICE—846 S. MAIN ST., BURLINGTON, N. C.
CANADIAN OFFICE—CHEMTEX PRODUCTS, LTD.
49 DENSLEY AVE., TORONTO 15, ONT.

THIS NEW AUTOMATIC TENSION DEVICE*

on the FIDELITY "400" Sets the New Standard in Seamfree Stocking Quality!

*Patents Pending in United States and all Foreign Countries



Compare the unique features of the revolutionary new Fidelity Automatic Tension Device:

- Installation *does not* increase machine height!
- Completely air-operated—no mechanical arms or contrivances!
- Uniform tension is maintained regardless of knitting speed!
- Requires no resetting if machine is hand racked!
- Nylon retainer on transparent receptacle assures no-snag removal of stockings!
- Totally self-contained unit—easily installed without auxiliary air inlets!

Compare—then decide to meet the *new* standard of production quality *now*, with the superior new Fidelity Automatic Tension Device . . . designed for use with the electronically controlled Fidelity "400" and other makes of knitting machines. Write today for details . . . or visit our showrooms.

Designers and Builders of Intricate, Automatic Precision Machines

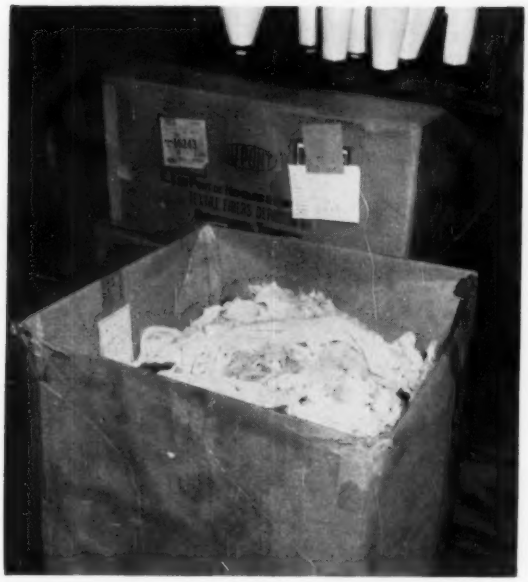
SINCE 1911

FIDELITY MACHINE COMPANY, INC.

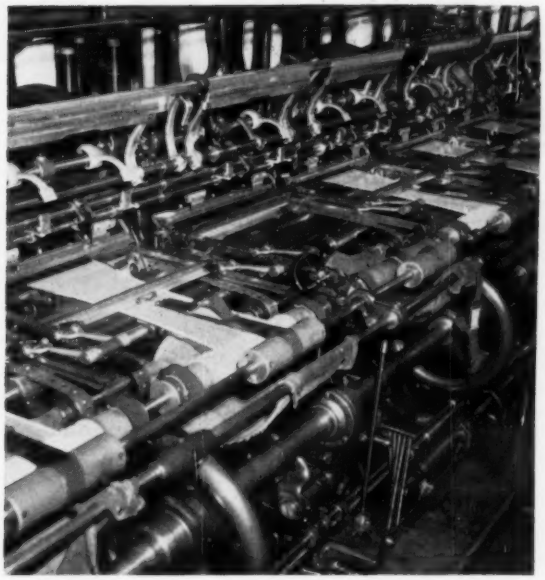
3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

EXPORT DEPT.: 25 BEAVER STREET, NEW YORK 4, N.Y.

SOUTHERN SALES OFFICE: 607 PROVIDENT BUILDING, CHATTANOOGA, TENNESSEE



Total waste now amounts to about four boxes each week. Formerly, the figure was about 16 boxes, each weighing about 21 pounds.



Knitter removes stocking from head if a defect is made in the picot; further waste would be made by continuing to knit.

Here's an effective approach to F-F waste

Constant supervision, not a magic formula, cut F-F waste 75%

Staff prepared Exclusive

THERE is no magic formula or weird system for cutting waste to permit a profit in operating a full-fashioned mill. Diligent pursuit of a logical program is the simple answer, according to one mill manager of considerable experience.

In this mill, waste was formerly taken for granted, and amounted to about 16 boxes each week. Now, total waste amounts to about four boxes each week, a reduction of 75%. Each box of waste weighs about 21 pounds and contains 15-denier nylon for the most part.

According to this mill manager, the reduction in the amount of waste may appear deceiving to some experienced mill men and may be questioned. For example, if the amount of waste were reduced merely by lowering the standards of quality in the mill, the program would be a farce.

In some instances waste may be reduced by mending extensively. For example, if a stocking is bad from the ankle to the foot, this portion may be removed, and a new foot may be knitted onto the good fabric. Also, menders may be repaired and sold as first quality goods or as irregulars.

In this instance, the mill spokesman stated that quality standards were not lowered and few additional stockings were mended. Since the mill makes "high quality" stockings and specialties, mending is generally unacceptable.

THE PROGRAM followed here is relatively simple, although a lot of effort is required on the part of management. The operatives are checked for both production and dozens of "perfects" and "waste." An operative producing menders or waste is briefed thoroughly on the cost of the waste and how he is producing it.

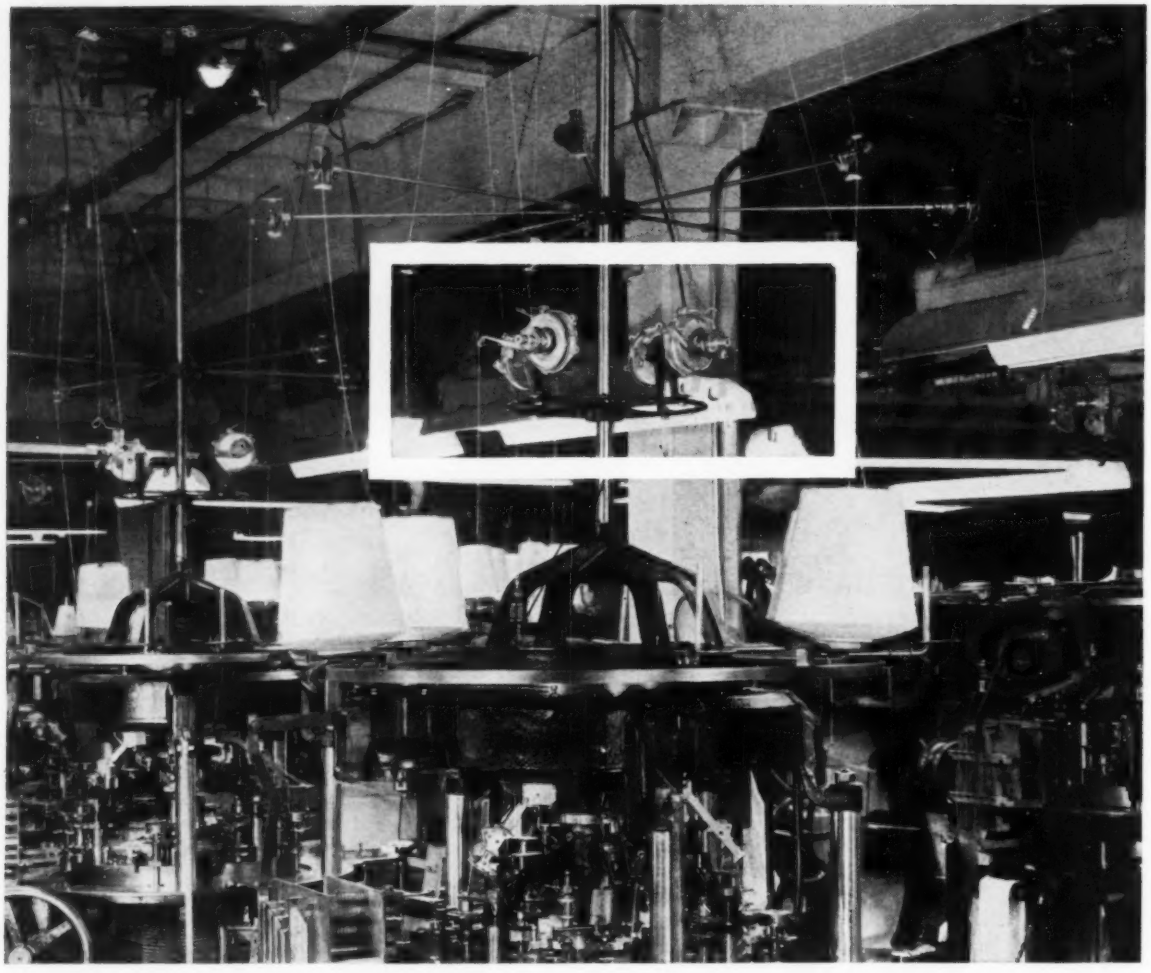
The "briefing" is done firmly but with discretion, so the operative is not offended or embarrassed among the other employees. The discussion is usually in a private place where samples and evidence may be exhibited and examined during the discussion.

The following facts serve as the theme for the "briefing" room: Nylon yarns in this mill average about $5.00 a pound in cost, with some as high as $6.75. Other thrown yarns used may cost more. (The mill uses 7-10 combination yarn and 15-denier with 10 tpi, as well as other special yarns.) The waste made in the mill brings about 30¢ per pound when sold.

Upon emphasizing the facts, seldom is more than a briefing necessary but the fight against waste must be a continuous program; otherwise, the operatives soon become complacent, and waste figures quickly begin to climb again.

Each mill must tailor the pro-

TENSION TROUBLES: How Kidde helps solve them at Playknit Mills, Inc.



Playknit Mills of West New York, New Jersey, users of "Orlon"* and "Ban-Lon"** yarns, recently equipped *all* their 4-feed Jacquard body-size machines, 12-feed Jacquard jersey and interlock machines with Kidde Standard Compensators. Mr. Alex Posner, owner of the company, reports these results since the installation: *1. Elimination of striped effect due to uneven tension. 2. Elimination of frequent stitch cam adjustment. 3. More uniformly sized stitches.*

Such outstanding results are not unusual. More than 750 textile mills throughout the world use Kidde tension devices to produce a far better product at a lower cost. You can do the same. For more information on Kidde's complete line, write Kidde today.

*Product of E. I. DuPont de Nemours, Inc. **Product of Joseph Bancroft & Sons.

Kidde

TRICOT AND RASCHEL MACHINES • WARPERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • PROCESSING MACHINES • TENSION COMPENSATORS

MANUFACTURING CO., INC — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

Cut holes were reduced from 8.4% to 1.1%. Average first quality was increased from 84.2% to 87.3%, as shown here.

gram to suit local requirements. This mill man stated that on high priced specialty items it is necessary to have the knitter remove a stocking from a knitting head if a defect is made in the picot; this prevents knitting the remainder of the stocking into waste.

Proof of the program's effectiveness is shown in production reports, which indicate that in less than three weeks cut holes were reduced from 8.4% to 1.1%. Average first quality was increased from 84.2% to 87.3%.

Suggestions for using nylon staple in half-hose

■ EXTENSIVE wear tests of half-hose made from 100% nylon staple and from blends of nylon staple with wool indicate that such products have the following advantages to offer:

Shrinkage resistance

Abrasion resistance

Ease of washing and maintenance

The shrinkage of 100% nylon half-hose is practically zero; and in blends with wool, a nylon content of 65% will control shrinkage to the extent that it is insignificant. This low shrinkage eliminates the need for drying the half-hose on frames.

Wear data show that nylon half-hose are so resistant to abrasion that the problem of "sock darning" is nearly non-existent.

YARN PREPARATION

Either of two types of nylon staple can be used in half-hose: crimp-set or regular crimp. Both types are crimped but the crimp-set fiber has been subjected to a heat treatment which sets the crimp permanently into the fiber. Crimp-set staple gives loftier and more resilient yarn than regular crimped staple; but yarns from crimp-set staple require higher temperatures in preboarding.

Most yarns are spun from 3.0-denier staple, which is equivalent in diameter to a 70s quality wool. A crisper handling half-hose can be obtained by using 6.0-denier staple or a blend of 3.0 and 6.0 denier. A softer hand can be obtained by using the finer 1.5-denier staple.

There is a tendency for 100% nylon socks to pill more than all-wool socks. For this reason, the yarns should have sufficient twist to anchor the fibers into the yarn.

Yarn dyeing will remove the antistatic finish applied during staple manufacture. If dyed yarns show excessive static during winding or knitting, the yarn supplier should be informed. He can correct the problem by applying an antistatic agent during the rinse after dyeing. *(More next issue)*

From Nylon Bulletin N-81, Textile Fibers Department, E. I. du Pont de Nemours & Co., Inc.

WILDMAN

75

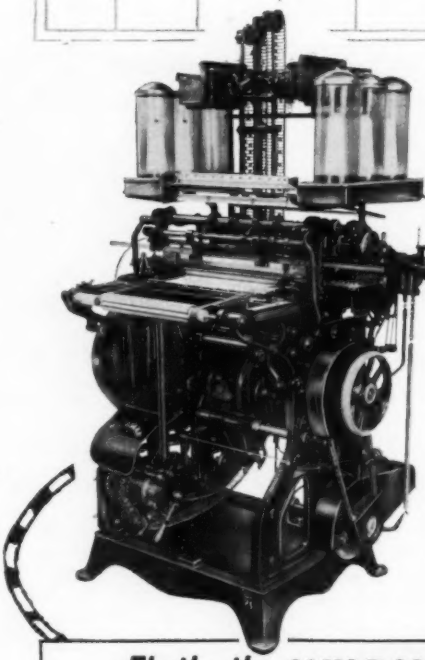
PREDICTS FOR '56 . . .

QUALITY PRODUCTION UP!

OPERATING COSTS DOWN!

It's a fact . . . proved every day in mills the world over . . . under all climatic conditions . . . temperature changes . . . assuring a top quality product . . . trouble-free production . . . simplicity of operation . . . assuring sustained, uninterrupted output . . . THAT IS THE WILDMAN 75 GAUGE FULL-FASHIONED HOSIERY MACHINE!

A top to toe sequence in one continuous operation . . . with 7 or 12 denier a tighter stitch . . . snag proof . . . better wearing for the wearer . . . faster moving for the hosiery buyer . . . and a windfall for the manufacturer.



And remember . . one operator can take care of as many as 30 WILDMAN 75's. Ask us to prove our case!

Wildman

makes the machines that tend to their own knitting

WILDMAN MFG. COMPANY, NORRISTOWN, PA.

That's the **WILDMAN**

75 GAUGE FULL-FASHIONED HOSIERY MACHINE

Manufacturers of: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

Some tips on the amount of information a person must have to do

Pattern design for Banner knitting machines

by Winston Shewmake
Exclusive

*Part 2**

PATTERN DISKS are oval rings consisting of 56 breakable lugs. Any lug which is broken off will permit a jack cam, which is horizontally aligned with it, to enter the jack butt pattern on the cylinder surface. Each lug also represents a progression move so as to provide the proper synchronization of lugs in relation to the patern sequence.

Thirty-four of these disks are stacked vertically on each of the four pattern drums. The lower disk is provided for double racking, and the 34th disk is a space disk horizontally opposite the elastic step on the pattern jacks.

Thus the pattern disk scope consists of 32 actual patterning disks vertically and 56 moves horizontally. Any lug broken off any disk within this scope will permit entry of the jack cam opposite it on any predetermined progression move.

For example, suppose the fifth disk from the bottom (not counting the over-kick disk) has the tenth lug broken off. This means that on the tenth move of the pattern drum the fifth jack cam will be released for action, and all jacks with a number five step will rise by means of the jack cam and perform the prescribed knitting cycle.

THE FOUR PATTERN DRUMS generally will progress together. However, on some patterns it is necessary only to progress one drum. For other vertical patterns no drum need be progressed.

The left front and right rear pattern drums provide for knitting cycles when the machine knitting cylinder is revolving clockwise. The right front and left rear drums provide knitting cycles when the cylinder is revolving counter-clockwise as viewed from above.

While the machine is negatively revolving past the jack cams, jack cams are held away from the cylinder by means of control drum cams. This motion is explained in detail later.

When placing the pattern disk onto the pattern drums, it is very important that the individual disks align horizontally with the adjacent jack cam lever. Shims are provided in case the disks are too low in relation to the levers.

If the disks are stacking too high, it is then necessary to file away the ridge around the edge which occurred while breaking the disk. It is also important to keep the die mark turned the same way (either up or down) on all disks stacked together on a drum.

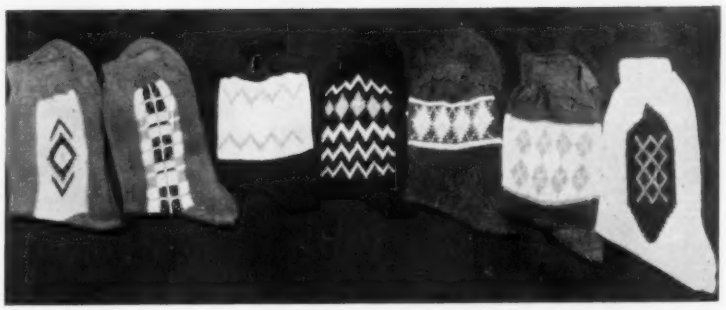
On most patterns using only one roll on the pattern drum operating disk, the over-kick disk is usually a plain disk with all lugs off.

It is necessary to use over-kicks on most reprogressed patterns and on the inlaid patterns where a longer chain set-up is necessary.

The addition of over-kick lugs simply allows a pattern drum to reprogress without having any break in the pattern sequence at the point where one progression cycle ends and the reprogression cycle begins.

To represent the pattern disk on a layout sheet (Illustration 4), the designer will divide the graph into four sections. Each section will represent a pattern drum and will be 56 squares horizontally and 34 squares vertically.

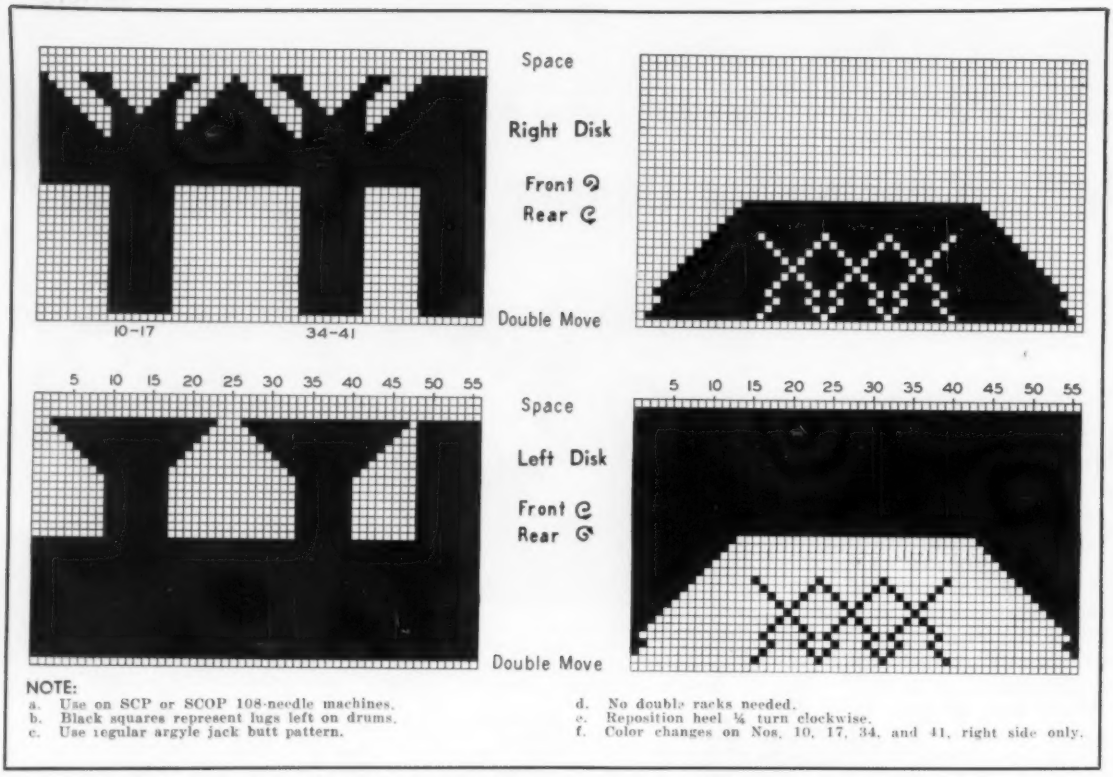
Most designers represent lugs to be left on the disk by darkening those squares with a pencil. However, there are others who desire to represent lugs to be broken off by dark squares. Either way is equally acceptable as long as the



There are literally thousands of different designs that can be made on solid color pattern machines. Several of them are shown in the socks pictured above. Such pattern flexibility gives the designer a large scope to choose from, while still utilizing only one make of machine. Practically all patterns will fall under one or more of the types listed below:

Bracketed	Interlocking	Rectangular	Stripe and design
Chain	Mesh	Rib	Symmetrical
Elongated	Mock wrap	Slant	Tuck
Float	Novelty	Slant group	Triangular
Floral	Octagonal	Split	Vee
Illusion	Overplaid	Squares	Vee group
Inlaid	Parallelogram	Stripe	Vertical
			Wedge

*Part 1 appeared in the November, 1956, issue.



NOTE:
a. Use on SCP or SCOP 108-needle machines.
b. Black squares represent lugs left on drums.
c. Use regular argyle jack butt pattern.
d. No double racks needed.
e. Reposition heel ¼ turn clockwise.
f. Color changes on Nos. 10, 17, 34, and 41, right side only.

4. The designer should give to the production department all the information necessary to produce the sock, including: direction of drum rotation, double racks, jack pattern, color pattern, color changes, elastic arrangement, and which lugs are to be removed.

method being employed is indicated on the graph.

Each section should also be labeled clearly as to the direction of rotation and overprogressions. The left front and right rear pattern disk drums rotate counterclockwise and the right front and left rear drums rotate clockwise.

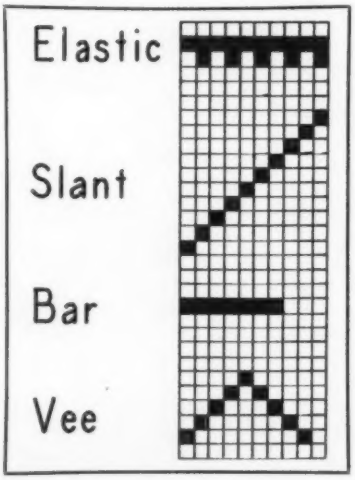
These indications may be made by inserting an arrow on the layout sheet under each drum, drawing and curving the arrow in the direction of proper rotation.

THE PATTERN JACK consists of a larger plain sole lug at the top (Illustration 5), a large booster step at the bottom, and 33 smaller pattern steps in between. The top pattern step is used for elastic top inlay and usually alternate steps along this horizontal line are utilized.

If, however, a ribbed top is desired, part of these alternate steps may be plain-soled out. For ribs, alternate elastic stepped jacks usually have long and short butts.

Thus each of the long butt jacks is blanked out and prevented from running up needles by the engagement of the left rear plain sole cam to a depth which will deactivate the long butt jacks, but not to the depth which would deactivate all jacks. The remaining 32 steps are used for pattern function.

5. These figures indicate the major types of jack groups (discussed under section on pattern jacks).



There are several major, and numerous minor, types of jack pattern groups. The most common is the "Vee" group. It is used for a variety of designs, especially those designs which have diamonds and triangular formations. However, it may be used for making squares, rectangles, and vertical and horizontal stripes, depending upon the pattern disk relationship.

The "Slant" pattern group is used for special spiral designs and novelty formations which are usually nonsymmetrical. The slant is also used on numerous illusion patterns.

The "Bar" group is used for blocks, or to finish a section of solid knitting by using only one jack cam. Bars of jacks are especially useful for running into action lots of needles with the use of one or a few selectors (jack cams).

Jacks should be broken clean

without any burrs or cracks. They should also have a small amount of sliding friction. This is acquired by slightly bending the jack shank so that pressure will be transmitted against the cylinder slot into which the pattern jack is placed.

While the knitting machine is in a continuous circular knitting action, and with the chain in movement, four complete courses of fabric will be produced per kick provided: (1) that the front needle raise cam is engaged, or (2) that enough selectors are engaged to raise all jacks and needles, or (3) that all negative slant plain sole cams are disengaged from jack operation.

THE CHAIN receives three kicks per link, or twelve courses of circular knit per link. For example: nine links of circular knit will equal 9 x 12 or 108 courses of circular knitting.

While the machine is in reciprocation, each link still receives three kicks. However, only two courses of fabric are produced per kick, provided all plain sole cams are disengaged; and also provided that all needles are raised once on the counter-clockwise movement and once on the clockwise movement. This is done by engaging enough selectors (jack cams) to raise the total amount of needles.

If, for example, a designer wishes to place three identical and symmetrical forms in the leg of a sock and the leg is to be 108 courses, then each form will consume 36 courses or six links. The total chain for the leg will equal 18 links. (This number is used for illustration only, since 108 courses are ordinarily too many for a standard length SCP pattern. The average is more in the vicinity of 100 to 104 courses.)

In producing inlaid patterns on the SCP and SCOP machines, the course-to-link relationship can be one course per kick, two per kick, or the elimination of or combination of each. These combinations are used to aid in closing eyelets. This gets somewhat complicated, and it is advisable that only advanced designers consider it as it would be extremely confusing to the beginner.

Very often it is necessary to move a pattern group or panel from the front and rear of the sock to the side. If, for instance, diamonds are in the front and rear of the sock, they may be placed in the side by merely transposing the heel either one quarter turn clockwise or one quarter turn counter-clockwise.

Generally, if no suture is formed in the pattern section, the heel is transposed clockwise by removing the first half of the long and short needles. Long butt needles are then placed where the short butt needles were, and vice versa. Transposing needles in this manner will necessitate a new position or shape for cams controlling the needle raise cam levers, so that the needle raise cams may operate to raise the long needles at the correct interval.

Also, new settings will be necessary along races on the main pattern shaft which control the needle raise cams, plain sole cams, reinforcing yarn finger, widening pick mechanism, and yarn feed engagement and disengagement at the top and heel sections of the sock. Primary attention should be given to the raise cam control timing to prevent damage which might result during run-in.

VERTICAL SUTURES are caused when a pattern section continuously starts and finishes on the same needle. Often, before heel transposition, these sutures are located in an undesirable position around the sock body. This is especially true if the suture is in the front or side of the sock. Vertical sutures should always be placed directly down the back of the sock like seams in full-fashioned hose.

To position a suture in the back of the sock, the set-up operative must do some or all of the following:

1. Reposition the heel section.
2. Interchange disk (right front to left rear, and left front to right rear.)
3. Make new cam surfaces on the needle raise cam and disk cams.
4. Retime the widening pick mechanism.
5. Retime the narrowing pick mechanism at heel and toe.
6. Synchronize plain sole cams according to the pattern being used.
7. New settings on the control drum cams which control needle raise cams will be necessary to correspond with the newly established heel position.

Control drums turn outward from the cylinder, and the cams which are placed onto them control the timing of the yarn feed fingers and also the synchronization of the jack cam and needle raise cam mechanisms.

During continuous circular knitting, these operations should be entirely disengaged by pulling away from the cylinder all feed fingers except the top or heel and foot feeds, and most certainly all jack cams from around the cylinder. Needles are activated for circular knitting by the entry of the front raise cam.

Jack control cams are cut so that the jack cams will enter the jack butt pattern and leave it at the predetermined spaces as designated on the designer's layout. This holds true for each of the three banks of jack cams on all four of the pattern quarters. It is essential that a jack cam not enter the jack butt pattern when the machine is in negative rotation in relation with that particular cam. To do so will cause serious jack breakage or jack cam damage. To prevent such damages, full cams are placed onto the control drums to disengage these mechanisms when the machine is in negative rotation (backing up).

Attention
Knitting Mill Readers

Your 1956 Index of Articles is in this issue. Look for it in the back of the book beginning on page 215.

Especially is it recommended that you review the titles of articles listed under "Management," "Wet Processing," and "Knitting."

The Index can be used as a convenient check list for articles which may be of interest to you but escaped your attention when they were published.

RUBBER LOOM NECESSITIES

Manufactured by

JACOBS

Jake Jacobs says—

"Years of mill-wise experience is reflected in this growing line of rubber loom equipment. Each product has been tried and proven in use!"

"Verybest"

RUBBERWELD LUG STRAPS

Molded as one piece. Guaranteed more uniform than any other Lug Strap on the market. Available both with and without plug.

RUBBERIZED FABRIC SWEEPSTICKS

Molded rubber combined with fabric. Uniform consistency assures maximum strength and length of life.

ROLL COVERING

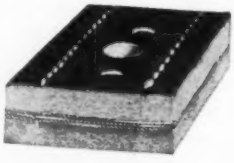
Available in many styles including: Smooth Surface; Natural Gum Rubber Covering, recommended for fine goods; Pyramid design; and others. Each style has the finest gripping surface for its specific task.

TUBULAR SPINDLE BUMPER

NAG BUNTER

"W" BUNTER
for W-2 and W-3 Looms.

2½-ply or 3-ply Leather Straps or Strapping with center ply of Rubberized Fabric.



RUBBERIZED FABRIC STRAPS AND STRAPPING

The Bullard Clark Company

SOUTHERN DIVISION
Charlotte, N. C.

JACOBS

NORTHERN DIVISION
Danielson, Conn.

NEW EQUIPMENT PARADE

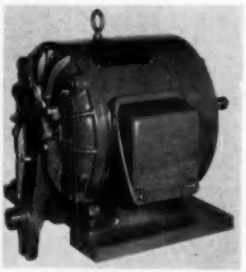
Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors

Compact clutch-brake loom motor

Among the features of a simplified Draper loom motor are a standard type rotor and stator, extra sturdy clutch and brake disk, oversized bearings to withstand the shock of loom operation, and fortified insulation.

Cork friction rings are bonded to both sides of the clutch disk. This disk is shifted to a cast iron braking surface for quick stops, and against a heavy-duty flywheel connected to the rotor for fast starts. The squirrel-cage, 1-hp motor is available for 220, 440, and 550 volts (1200 to 1800 rpm) three-phase, 60 cycles. The motor utilizes a new enamel-covered wire which retains its insulation qualities under heat and flexing conditions several times that of previously used wire.

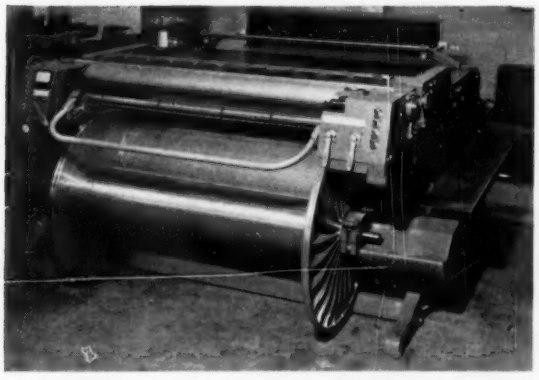


Protection against dirt, oil, and chemicals is assured by baked-on protection given the stator. The preparation used in the baking gives a homogeneous mixture of thermoset varnish and water repellent silicone.

Westinghouse Electric Corp., Motor and Control Div., Buffalo 5, N. Y.

Do you want more data? Write ◆ or use card on page 193; list M-101

Beamer offers high production, power doffing



A section beamer, Model 158 A, designed to receive 54¼" section beams with up to 36" flange diameter at yarn speeds up to 600 ypm, can be operated at speeds up to 1000 ypm. The beamer has a variable voltage d-c type drive using an a-c/d-c motor generator combination. Acceleration is smooth, and constant yarn speed during build up is maintained.

Electric brakes, combined with the dynamic braking of the main drive d-c motor, control stopping time. Holding brakes keep the beam at a standstill when stopped. Roller pressure is maintained, and doffing done through an air-motivated hydraulic system.

Kidde Mfg. Co., Inc., 35 Farrand St., Bloomfield, N. J.

Do you want more data? Write ◆ or use card on page 193; list M-102

Card drive gives finger tip control

An individual card drive, Type CD-2, consists of a 1½ hp high-torque card motor with a double groove "B" size V-belt pulley driving to a double pulley mounted on ball bearings at the jack shaft. For photo of this drive, see TI's Annual Equipment Parade & Buyer's Guide, Mid-November 1956, page 19.

From this pulley, two "B" size V-belts drive the main drive pulley, which is ball-bearing mounted on a collar assembly on the card shaft.

Integral with this pulley is a clutch drum on the inside, and a grooved rope pulley of standard diameter located on the outer side for hand stripping.

The drive is controlled by a conveniently located clutch lever and a simple, expanding shoe clutch mounted in the hub. With motor and pulleys running at normal speed, the card is started by shifting the clutch lever to the operating position. Movement of this lever expands the clutch shoes to engage them with the revolving clutch drum in the main pulley. A simple self-locking toggle mechanism provides for this expansion of the clutch shoes. This toggle action also provides two positive positions for the clutch lever — drive and idle.

This clutch arrangement gives finger tip control of the main cylinder — such as for jogging the cylinder when starting of hand stripping.

When the clutch lever is returned to the idle position, the clutch shoes automatically disengage.

Southern States Equipment Corp., Hampton, Georgia.

Do you want more data? Write ◆ or use card on page 193; list M-103

Knit 168" tricot at 800 cpm

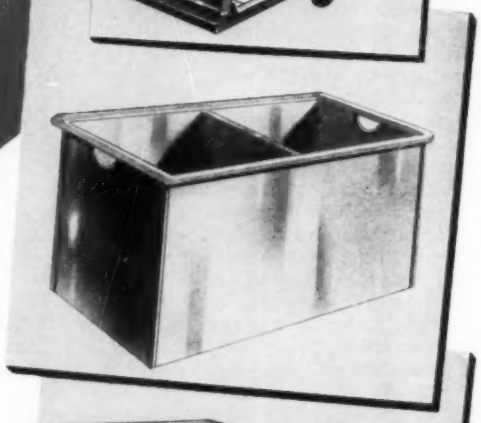
The Reading tricot machine utilizes eccentric motions and sturdy construction to attain a recommended speed of 800 cpm. The machine weighs approximately 15,000 lb, and on test runs has exceeded speeds of 1000 cpm. Of 168" knitting width, the unit is available in 28 gauge or finer, in 2-bar construction which is convertible to 3-bar operation, and in 9 pattern ratios from 1 to 6 to 1 to 96

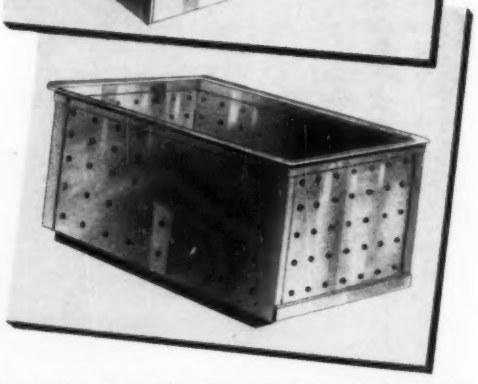
The machine can knit 90 to 95% of the fabrics being knitted in the trade — and fabrics from a 6" to a 13" quality.

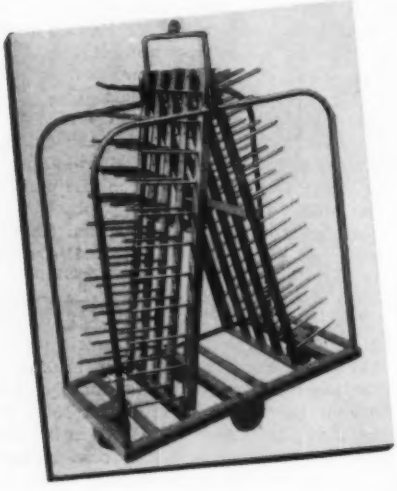
No adjustments are required in changing from one quality to another. The amount of the take-up and let-off only are changed. A variable speed drive permits speed selection to be made quickly. A "needle down" stop position adds to the operating efficiency.

To minimize the influence of temperature on parts di-

WHAT DO YOU NEED IN *Materials Handling*







STANDARD or SPECIAL

- Aluminum Filling Boxes
- Comber Lap Trucks
- Comber Spool Trucks
- Conditioning Trucks
- Cone Trucks
- Doff Trucks
- Double or Triple Deck Trucks
- Gear Guards
- Pin Boards
- Platform Trucks
- Roving Can Trucks
- Tanks
- Fiber Trucks & Boxes

Almost a half century of experience in metal fabrication is your assurance of the "BEST QUALITY" when you use "JENKINS STURDI-BILT LINE" of materials handling equipment . . . available in fiber and all metals.

NO ORDER TOO LARGE OR TOO SMALL

Manufacturers of Jenkins Dynamically Balanced Cylinders and Precision Built Screens.

SINCE 1912 THE ORIGINAL

JENKINS

METAL SHOPS, INC.
GASTONIA, NORTH CAROLINA
QUALIFIED ENGINEERING

R. B. Jenkins, President
J. S. Jenkins, General Mgr.
B. W. Lynch, Jr., Sales Mgr.
Georgia, Alabama, Mississippi, Texas, Tennessee: J. P. Goldwire
South Carolina: J. O. Goldwire

mensions, the needle, sinker, and guide bars are made of alloys with low thermal expansion.

All cams have been eliminated with the exception of the pattern wheels. The machine derives its motion and speed from two eccentric shafts running in the ratio of 2 to 1. Precision type gears assure accurate timing at all times.

The needle, guide, sinker, and presser motions have individual balancing motions to insure quiet and smooth operation at the high speeds. Lubrication is provided through drilled crank shafts and a tubular drive shaft at a pressure of approximately 20 to 25 lb.

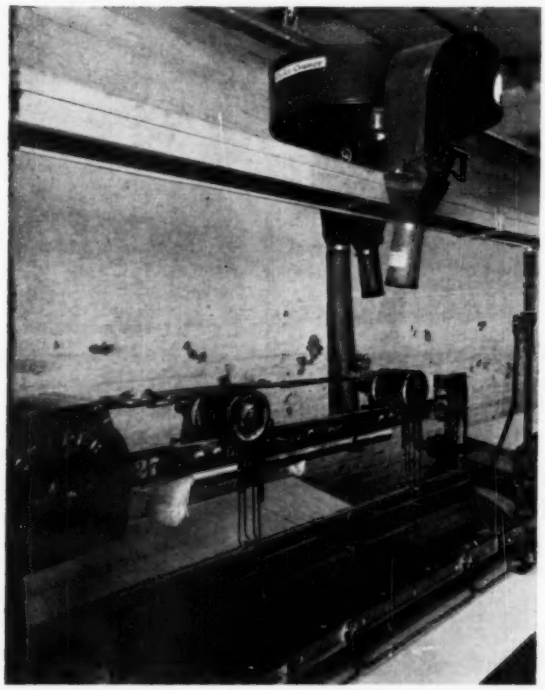
At 800 cpm the machine operates with a gentle rise and fall of the primary motions. The needles are never stationary. Thus their constant motion reduces the necessary swing of the guide bars by some 30%. Sinker motion is approximately 1/16" compared to the ¼" (app.) of the conventional cam motions.

For a photo of this new tricot knitter, refer to page 125 in TI's Annual Equipment Parade & Buyer's Guide published last month.

Textile Machine Works, Reading, Pa.

Do you want more data? Write ◂ or use card on page 193; list M-104

Oscillating unit cleans back and front of looms



In plants weaving cotton or other staple fibers the Oscillaire loom cleaner increases production, improves working conditions, lessens fire hazards, reduces woven-in lint, oil spots, set and start-up marks, skips, floats, and pickouts.

Separate, closely-controlled air currents meet the cleaning requirements of both the back and front areas of the loom. On each passage of the cleaner over the looms, oscillating air currents of varying intensity impart a jolting effect to the accumulated lint particles. Lint and other clinging matter are shaken free by this action.

Parks-Cramer Co., Fitchburg, Mass.

Do you want more data? Write ◂ or use card on page 193; list M-105

Makes wool fabrics stain-resistant

Application of a fluoro-chemical treatment, Scotchguard, will make fabrics resist oil-borne, water-borne, and combination stains. The treatment is applied during the fabric finishing process in either one or two additional steps without additional equipment. The compound destroys the "wicking" property of fabrics to a degree.

A close-up of the way oil works on fabrics is shown at the left. By decreasing the "wicking" property of the fabric with Scotchguard the oil can be made to stand in drops as shown at the right.

The treatment can be applied to men's suitings, slacks, sportswear, and top-coating fabric — including wool and worsted flannels, tropicals, gabardines, sheens, and other worsted and worsted-synthetic blends, as well as upholstery fabrics.

Once treated, fabrics are guarded against all stains of salad dressings, gravies, lubricating oils, cooking greases, ink, soda pop, coffee, ice cream, milk, etc. In the event that slight soiling does appear, it is very easy to remove with the ordinary solvent spot-remover without leaving a ring.

In most cases the treatment enhances the fabric "feel" or "hand" and leaves no visible effect upon the fabric appearance. It causes no noticeable increase in garment weight. The average fabric can be commercially cleaned at least five times and still retain oil-repellency. The treatment has no adverse effect upon the wearer's skin.

Minnesota Mining and Mfg. Co., 900 Fauquier Street, St. Paul 6, Minn.

Do you want more data? Write ◂ or use card on page 193; list M-106

Machine separates ends to speed drawing-in

The Titan Selector separates the ends of warps to be drawn in by sewing an elastic seam across the yarn in such a way that each single thread is encircled by an elastic loop. The warp is then placed in the drawing-in stand, the end of the elastic seam placed in an automatic tightening device which separates ends for the operative to a distance of ⅛" to ¼".

If it becomes necessary to select a thread not seamed in its correct order, the thread can be drawn in across another in order to keep color patterns, etc., straight.

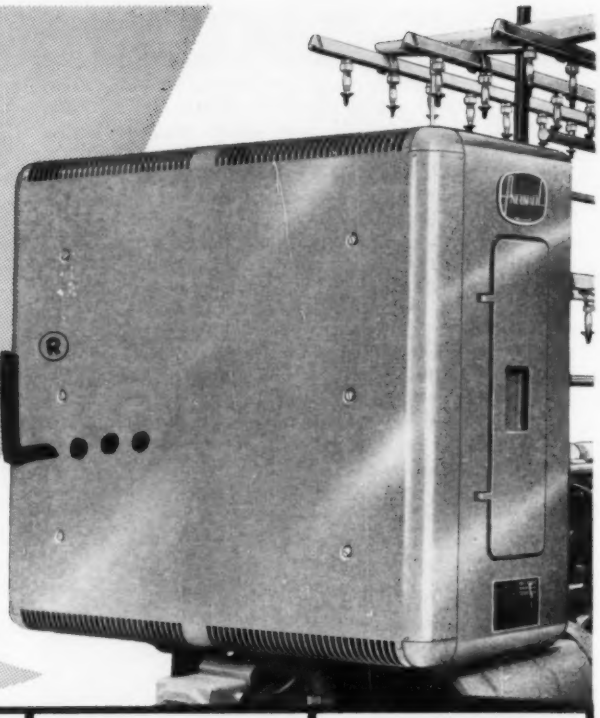
The selector utilizes a stand for selecting and sewing the ends; and based on an operative's ability to draw in 1000 ends per hour, the machine will keep up to 10 operatives supplied with patterns.

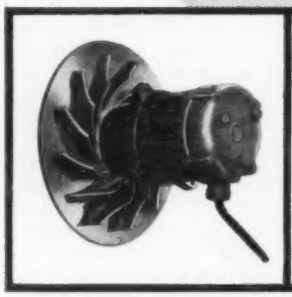
The unit is designed to supply patterns which are to be drawn in through both harnesses and drop wires as well as patterns which require only drawing through the harnesses.

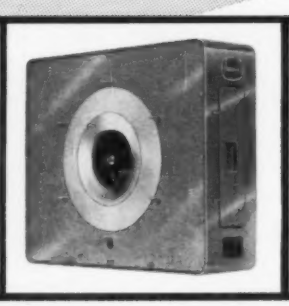
Edda International Corp., 468 Fourth Ave., New York 16, N. Y.

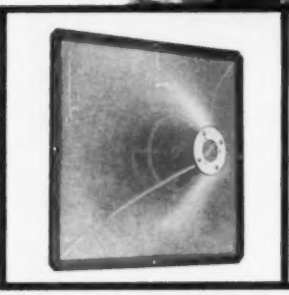
Do you want more data? Write ◂ or use card on page 193; list M-107

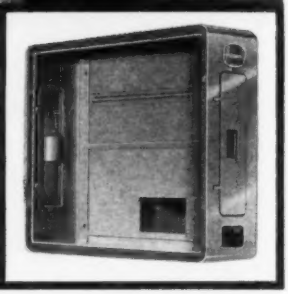
WHY IS PNEUMAFIL®...











. . . the most efficient material collecting system in the world?

Because it provides positive end pick up PLUS higher air quantity for better cleaning.

. . . collection capacity greater?

Because less frequent fiber removal cuts mill costs. The conical screen (originated by Pneumafil) makes this possible.

. . . equipped with a turbo fan with involute rotor blades?

Because this fan (developed by Pneumafil) is self-cleaning and therefore always runs perfectly true with virtually no bearing wear.

. . . equipped with flush doors and cast in handles?

Because mills reported loss time accidents caused by the old type protruding handles.

. . . made with four different air discharge covers?

Because spinning frame motor heat varies in every mill and it is important to dissipate this heat evenly.

Why is Pneumafil designed the way it is? Because YOU, Mr. Mill Man, designed it to do the very best job possible in your mill. Yes, your suggestions have been "built in" to our latest and most modern equipment.

There IS a difference . . . and your valuable ideas make that difference!

PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA
Atlanta, Georgia — Needham Heights, Mass.

PNEUMAFIL®

Copyright 1956 Pneumafil Corporation

Spinning top arm fits two systems

A top roll weighting and suspension system, the Tru-Set, is available for both the Duo-Roth and the Shaw systems of spinning. In use with the suspension system, the two systems differ only in the control zone. All other parts are identical.

Springs supply the roll pressure. This is effected by a weight horn pivoted about a flatted bar secured rigidly to the roll stands. Properly set, the roll pressure is not changed by the buffing routine, even as the top front roll decreases in size, or when the roll settings are changed. Roll pressure can be changed only by changing the springs.

A toggle, in the form of a weight release lever, enables the operative to release the weight horn and the suspension system when needed. The whole top arm assembly swings open around the flatted bar. When snapped into running position, the weight lever, with its toggle action, holds the top arm assembly in place against the working pressure. All top rolls are of anti-friction type.

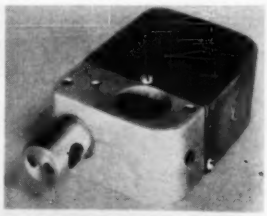
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

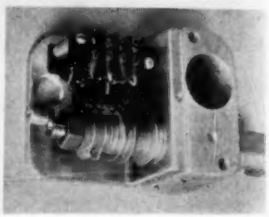
Do you want more data? Write or use card on page 193; list M-108

Automatic fabric feed control

A control for winding and feeding of textiles, etc., the Jordan Dancetrol, provides automatic tension control from a few ounces up to several hundred pounds, and constant velocity control to several hundred feet per minute.

It can be readily adapted to dancer rolls or pivot arms on existing machines or incorporated as a part of new





machines. It may be mounted on the frame of the machine or can be had with its own adjustable stand for floor mounting.

Two types are available. The "limit switch" type provides on-off control for drive motors or for pilot motor control of variable speed drives. The "proportional" type provides control for variable speed drives with the "speed-up" or "slow-down" signal proportional to pivot arm movement from the neutral position.

For mechanical variable speed drives a balanced bridge followup control is used. Any pilot motor can be controlled by the unit.

The Jordan Co., Inc., 3235 W. Hampton Ave., Milwaukee 9, Wis.

Do you want more data? Write or use card on page 193; list M-109

INTER-PLANT SHIPPING

Been looking into the economy of canvas hampers? You owe it to yourself to give some consideration to

UTILITY Style 67 has proven extremely versatile throughout the whole inter-plant shipping operation, handling everything from raw goods to finished product.

CONVENIENCE Furnished with hinged wooden top and locking hasps, it nests when empty or supports other hampers when loaded for space-saving both in transit and in storage.

ECONOMY Its completely smooth interior prevents snagging or chafing of delicate fabrics or yarns. Style 67 is light weight; cuts shipping costs—makes hauling easier. Made from the finest leather-reinforced duck over special spring steel frame, plus the manufacturing know-how of Lane's sixty years of experience. It has an outstanding record of service and durability. Style 67 guarantees your best buy.

Style 67 is available in 6 standard sizes
From 28" long, 20" wide, 16" deep
To 40" long, 28" wide, 30" deep
INSIST upon Lane
and you insist upon the finest

Canvas Basket Craftsmen Since 1894

Lane

W. T. Lane & Bros., Inc., Poughkeepsie, New York

Parks-Cramer®
Systems for Textile Mills

Complete Air Conditioning
—including filtering and refrigeration

Automatic Airchanger®

Direct Humidification
—GRADUMATIC® and TURBOMATIC®

Automatic Regulation
of temperature and humidity—PSYCHROSTAT®

* * *

Traveling Cleaners for Textile Machines
—roving, spinning, winding, spooling,
twisting, warping, knitting, weaving.

SpinSaVac® broken end collection—unit or central

SpinSaCreel

Traveling Room Cleaners and Floor Sweepers
—with vacuum lint removal at floor level

* * *

Research, design, manufacture,
installation, service

Parks-Cramer Company

Air Conditioning and Air Handling since 1906
Traveling Cleaners since 1926

FITCHBURG, MASS. • CHARLOTTE, N.C. • ATLANTA, GA.

404

Dyer keeps high-bulk yarn skeins relaxed

A pulsating skein dyeing machine keeps high-bulked yarns relaxed during the entire dyeing process. This feature, plus automatic flow reversal produces fluffier and more resilient yarns. The machine is suitable for both synthetic and natural fibers.

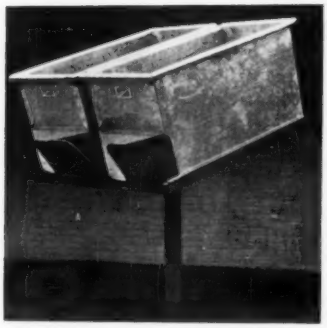
Double sets of poles, adjustable for skeins up to 76", prevent snarling, kinking, and eliminate waste. Level dyeing is obtained as a result of uniform liquor flow throughout the dyeing chamber. Large batches may be processed by interconnecting machines.

A distributing head and false bottom are calibrated to provide uniform flow throughout the machine without turbulence. Rates of flow are adjustable. Loading and unloading are made easier and faster by split carriers.

Smith-Drum & Co., 432 W. Allegheny Ave., Philadelphia 33, Pa.

Do you want more data? Write ◂ or use card on page 193; list M-110

Stand spouts control prepositioned filling



A stand to support two filling boxes at the loom battery position has a built-in spout for enabling the battery filler to grasp and remove the filling packages with a minimum of effort and in minimum time.

As part of a filling handling system, the boxes are designed to hold the filling in a prepositioned manner with the quills arranged to allow the operative to reach the loose ends of filling without juggling the packages. A sliding door on the box keeps the filling in place during transport. The boxes have stainless steel bottoms.

Bennett Rose Co., P.O. Box 8, Roebuck, S. C.

Do you want more data? Write ◂ or use card on page 193; list M-111

F-F sweater knitter makes its own trim

In addition to the company's line of new four-section full-fashioned sweater knitting machines, Robert Reiner, Inc., now offers long-section full-fashioned hosiery machines that have been converted to make sweater fabrics. They feature a new attachment which permits knitting of both jersey and mock rib fabric on the same unit; thus, need for flat knitting machines to make trim is eliminated.

Sleevers have 16 sections with 22" wide knitting heads; body machines have 10 and 12 sections with 31" wide knitting heads. Available with all sinkers or with sinkers and dividers, one machine will produce a dozen sweaters with mock rib in from 11 to 20 minutes, depending on the style being run.

The mock fashion device operates in the following manner: A pattern wheel actuates a lace or second needle bar; in turn, the pattern of the actuator plus the second row of needles makes a mock rib. Each movement of the wheel has 20 designs and as many as 38.

Sweaters for men and women can be made on the

ELEVATED STEEL TANKS

• For more than a century, COLE elevated tanks have been helping provide fire protection and adequate water reserve for the textile industry.

Capacities from 5,000 to 2,000,000 gallons —and covering designs ranging from standard hemispherical self-supporting bottom to spherical tank on tubular tower. Send us your inquiry, stating capacity, height to bottom and location. Write for *Tank Talks.*

R. D. COLE MANUFACTURING CO. COLE NEWNAN, GEORGIA

Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.

Established 1854

R. D. COLE MANUFACTURING CO.
NEWNAN, GEORGIA

machine, including classics, raglans, and pull-over styles. Both natural and synthetic yarns can be utilized. Cruising speed is about 50 courses per minute.

Robert Reiner, Inc., 550-564 Gregory Ave., Weehawken, N. J.

Do you want more data? Write ◀ or use card on page 193; list M-112

Flameproofing agent applied cold

Phosphorylamide applied to fabrics in cold padding operations, dried and cured at 290 F, imparts lasting flameproofing to the cloth. Cellulose combines with the compound without the use of added catalysts or special conditions. The treatment can be applied successfully to a variety of fabrics such as pile fabrics, flannels, velveteens, drills, ducks, and uniform twills.

Although comparatively low concentrations of the chemical will give flame protection, the quantity used can be increased greatly without drastically affecting the fabric hand.

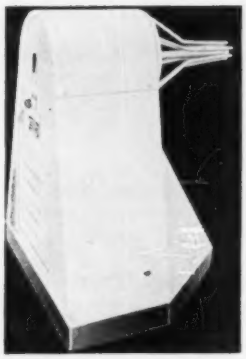
Wica Chemicals, Inc., P. O. Box 506 Charlotte, N. C.

Do you want more data? Write ◀ or use card on page 193; list M-113

Machine speeds detacking

A portable detacking machine successfully operates at speeds up to 110 ypm.

Only one operator is required to handle the goods as they come from the fulling mill to the de-twisting operation to the detacker and then to the scutcher. The



unit can be set to run at the same speed as the scutcher, this speed being determined by the type of goods being processed.

Mounted on casters, the machine can be easily moved. Constructed with a ventilated case of heavy gauge sheet steel with removable hood for easy inspection and maintenance, the machine features a thread creel of round steel bars so shaped as to permit quick removal of accumulated threads. It is placed parallel to and below the doubled cloth which is being drawn into the scutcher and the thread is automatically wound onto the revolving thread creel as the cloth passes by. Power is supplied by a ¼ hp motor.

Curtis & Marble Machine Co., Worcester, Mass.

Do you want more data? Write ◀ or use card on page 193; list M-114

Cyclic urea resin for cottons and rayons

Emboset-Z, a new cyclic urea resin for use on cotton, rayon, and rayon blends, possesses durable fiber reactant properties. On cottons it displays very low chlorine retentive properties.

In minimum care finishes it shows excellent crease

Spintex Comb Box and Doffer Comb Units

For Cotton, Woolen and Worsted Cards

Spinnerei-Maschinenbau Stiehl, Baumann & Co.
Mühlhardt (West-Germany)

1. Equipped with SKF roller bearings
2. Storage and distribution of all parts in USA.
3. High-pressure grease lubricated during operation
4. Simple design — rugged construction
5. Standard design for all types of cards

Agents in USA. Lenkatex Company, Inc.
136 Liberty Street, New York 6, N. Y.

Southern Distributors: Meadows Manufacturing Company, Atlanta, Georgia.

MILTON
NYLON & RUBBER YARN
BEAMS

MILTON aluminum alloy Tricot and Section Beams feature CONTINUOUS WELDED CONSTRUCTION

Drop-forged, heat-treated aluminum alloy heads and extra heavy barrels withstand pressures of nylon and rubber warps.

WRITE FOR FREE BULLETINS
No. 54-S (Steel Beams) No. 49-A (Light Metal Beams)

MILTON MACHINE WORKS, INC.
MILTON • PENNA.

KENTEX
TEXTILE APRONS

Precision-built, of genuine leather, they "Fit Better—Wear Longer." Write for free samples and prices.

KENTEX APRON

TEXTILE APRON CO., East Point, Ga.

HUGH WILLIAMS & COMPANY, TORONTO, CANADA—CANADIAN REPRESENTATIVE

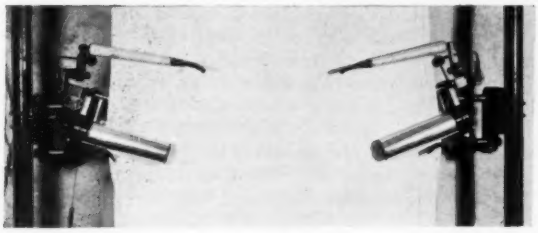
resistance and shrinkage control combined with a minimum loss in tensile strength. It can be used in conjunction with Ranedare-R, -S, and -C — water repellents for combination finishes.

On rayon and rayon blends it has demonstrated outstanding crease resistance and shrinkage control, plus the added feature of a full and luxurious hand, while maintaining a negligible tensile strength loss. It possesses excellent storage stability and is compatible with all the common textile auxiliaries used in thermosetting finishes.

Metro-Atlantic, Inc., 64 Salisbury St., Centredale, R. I.

Do you want more data? Write or use card on page 193; list M-115

Device makes straight ends on cloth rolls



The "Take-Up" prevents lapped ends on cloth rolls caused by sudden slackness in the cloth as it is being guided.

The device consists of tapered rolls with self-lubricated bearings. The rolls are carried on an arm which is counterweighted and attached to a ball bearing support. The tapered rolls ride on the selvage of the cloth, and if the selvage becomes slack the arm falls with it, thereby maintaining the tension. When the slackness disappears, the cloth itself carries the tapered roll to its upright position where it barely touches the moving fabric.

Guider, Roll and Service Co., P.O. Box 3747, Peninsula Station, Daytona Beach, Fla.

Do you want more data? Write or use card on page 193; list M-116

Machine makes novelty f-f sweater fabrics

New features of the "Reading" full-fashioned outerwear machine enable knitgoods manufacturers to meet the growing demand for high styling and novelty fabrics in the full-fashioned sweater field. It is capable of (a) knitting variable widths of lace design; (b) knitting both continuous or interrupted lace panel designs; (c) producing a boucle effect; (d) combining lace and intarsia patterns; (f) preventing loss of production through jams by (1) a safety stop motion, (2) controlled narrowing spindles, (3) double control automatic filler points.

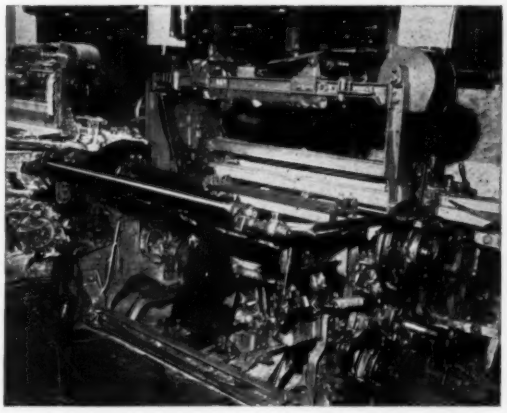
The Reading center lace attachment is now available with individually controllable lace fingers, which provide the means for knitting more intricate and elaborate patterns and designs. This feature eliminates the necessity for repetition in lace design work and permits the opportunity for altering the width of the design in accordance with variations in fabric widths.

Lace bars attachable to the lace finger brackets can be supplied for knitting panel designs in the garment. When the bars are used in conjunction with the lace fingers, the range of patterns that can be knitted is practically unlimited. This arrangement permits widening and nar-

now! reduce seconds with LINTGO*

***the non-flammable, economical lint-clogged machinery cleaner**

- **Inhibits Rust**
- **Safe to Skin**



LINTGO leaves machinery clean and lint-free as above. Lint does not swirl into the air.

SPRAY ON LINTGO—BLOW DOWN LINT DROPS TO THE FLOOR

LINTGO reduces slubs, seconds, and improves quality. It is non-corrosive, odorless, non-flammable, fumeless, non-toxic and inhibits rust. It can and will solve your lint problems quickly, easily, economically and without hazard. Send for technical literature explaining properties, methods of application, etc., today using the handy, postage-paid return card on page 193.

Lester Laboratories, Inc.

P. O. BOX 4897 ATLANTA 2, GA.

Are you paying for rings you don't get?

New DIAMOND FINISH standard rings AT SOME POINT IN TIME cost less than using old worn ones. Exclusive DIAMOND FINISH lubricated styles ON CERTAIN OPERATIONS can yield an immediate and large profit on the investment. May we help you study your rings to determine these profit-points for your mill?

WHITINSVILLE (MASS.) SPINNING RING CO.

DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

Rep. for the Carolinas & Va.: W. K. SHIRLEY, 25 Oak St., Belmont, N. C.
Rep. for Ala., Ga., & Tenn: H. M. JACKSON, 216 Longview Dr., Jefferson, Ga.

Puzzled? Call on Moretex

You need not be bewildered by the dozens of new chemical formulas produced for new fibres. Moretex will study your problem and recommend the right one. If you need something special, Moretex will make it. You'll get better results when you call on Moretex.

amine condensates

sulphated fatty alcohols

methyl taurides

alky aryls

non-ionic detergents

Try MOROPON LC — a scouring agent which prevents cracks and crush marks. Has all the advantages of cocoanut amine condensate and the economy of less expensive fatty acids. Contains no tall oils.

MORETEX *Chemical Products*, INC.
ESTABLISHED 1908
MANUFACTURING CHEMISTS SPARTANBURG, SOUTH CAROLINA

rowing of the fabric without sacrificing the fashion markings.

Textile Machine Works, Reading, Pa.

Do you want more data? Write ◂ or use card on page 193; list M-117

Twister has stationary lifter rods

The all-new Meadows twister frame is equipped wherever possible with anti-friction bearings, including the wandering-type builder motion. There are no bushings on the stationary lifter rods; the ring rail seats are attached to the lifter rods by anti-friction rollers, and they are activated by roller chain and sprockets.

Other features of this machine include underframe motor mounting with a variable speed drive enclosed in the foot-end; all-steel base rails, roller beams, head- and foot-ends; anti-friction spindles; driving pulleys instead of cylinder; double idlers for easy reversing; top rolls running in oilless-type nebs; and doors of glass fiber.

The frame will accommodate bobbins from 10" to 15" in length. The individual drives for the spindles are mounted on a heavy-duty shaft which runs in self-aligning ball bearings. The sprockets are mounted beneath the deck boards—the counter-balancing builder weights are also activated by roller chain and sprockets.

For photo of this twister, see TI's Annual Equipment Parade and Buyer's Guide, page 47.

Meadows Mfg. Co., 1190 Astor Ave., S. W., Atlanta, Ga.

Do you want more data? Write ◂ or use card on page 193; list M-118

Fleece knitter separates face yarn from back

The Model TIF knitting machine is designed to produce fleece fabrics for coatings, sweatshirts, underwear, sportswear, etc., at a production rate, depending on the type of fleece cloth desired, up to 35 yd per hour.

A multiple feed, sinker top, latch needle unit, the machine differs from all conventional latch needle machines with lay-in attachments in that it provides for the introduction of an intermediary yarn (tie-in) which separates the face yarn from the back of the cloth, and thereby enables all the lay-in yarn to appear on the face and form a perfect napping surface.

In addition, since this knitting method separates the back from the face yarn, it results in the formation of a perfectly clean jersey back. The fabrics also retain the elasticity common to all plain jersey fabrics.

One of the most common cloths made on the machine requires a three-station feed set-up. The first of the three is the lay-in feed where the fleece yarn is fed in a pre-determined pattern. The second or tie-in yarn is introduced as a "tie-in" and it is this yarn that is knitted along with the knit yarn at the third feed and not the lay-in yarn itself. This distinctly "separates" the face and back yarns and allows better control and quality of both sides.

By no means is the machine limited to the above set-up. Aside from an almost unlimited stitch and lay-in variation it is possible to adjust this machine to obtain one or more consecutive knit or lay-in feeds depending upon the type fabric desired.

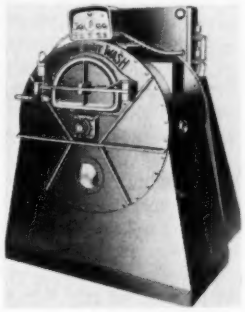
The method used in producing this type of fleece cloth has other distinct advantages. Since the lay-in or fleece yarns are actually tied in without forming a knitted loop at any time, there is no real limit to specific yarn count. This allows a great variety of types and weights of fleece fabrics to be produced. In addition, the unit

is readily capable of varying the laid-in pattern at will. This involves merely a change in the pattern wheel setting at every third feed.

Supreme Knitting Machine Co., Inc., 94-02 104th St., Ozone Pk. 16, N. Y.

Do you want more data? Write ◂ or use card on page 193; list M-119

Compact 50-lb washer-extractor for textiles



A combination washer-extractor of 50 lb capacity has been designed to meet all specific washroom needs in the textile industry. Its high efficiency "drop-and-squeeze," gentle wet-rub-wash action means little tensile strength loss.

Positive water temperature control is assured at all times. The unit is suitable for washing woolens as well as cottons, and its gentle wash action makes it possible to thoroughly launder synthetics without pilling or matting.

Its size and controlled speed make the unit adaptable for dyeing — each cycle gives the load a gentle squeeze which assures maximum penetration of the fibers. It is recommended for special treatments of small lots, finishing, coating, sizing, as well as laundering.

Textile work is completed in the unit in 30 minutes, including the wash, extraction, and preliminary shake-out. Requiring a minimum of floor-space — 48" by 44" — the unit takes up only one-third the area occupied by separate washers, extractors, and tumblers. There are no wet floors because the work is loaded dry and leaves the machine completely extracted, ready for the dryers, presses or ironers.

G. A. Braun, Inc., Syracuse, N. Y.

Do you want more data? Write ◂ or use card on page 193; list M-120

Loom motors have high overload capacity

Possessing ample overload capacity for breaking in new looms, Life-Line A squirrel-cage loom motors are totally enclosed, non-ventilating, constant speed, and are designed to take care of the varying torque requirements encountered during the picking cycle.

A balanced design, combining the benefits of flywheel effect and slip, smooths out the peak and valley loom loads with resulting superior operation and minimum consumption of electrical energy. The motors are furnished foot-mounted or with three-point suspension bracket as required, and in ¾ to 2 hp, 60 cycle, 2 or 3 phase.

The use of a special grease in oversize bearings with locked construction assures longer life. A roller bearing is used on the pinion end.

Westinghouse Electric Corp., Motor and Control Div., Buffalo 5, N. Y.

Do you want more data? Write ◂ or use card on page 193; list M-121

John P. MAGUIRE & COMPANY INC.

ON TRUTH—

The truth depends on, and is only arrived at, by a legitimate deduction from all the facts that are available.

SAMUEL T. COLERIDGE, 1831

A vital part of our service is to help supply all of the facts that are material and to assist in drawing legitimate deductions from them.

JOHN P. MAGUIRE & COMPANY, INC.

FACTORS

370 Fourth Avenue, New York
Murray Hill 3-4141

DRONSFIELDS' PATENT
ATLAS BRAND
EMERY FILLET

STOCKED BY
THE PRINCIPAL MILL SUPPLY HOUSES
AND CARD MAKERS

ELASTIC
IDENTIFICATION
BANDS
for your
ROVING CANS

BANDS OF UNITED ELASTIC WEBBING FEATURE

- long wear and service
- very attractive prices
- well-made, firmly-woven construction
- securely-sewed joinings
- bright, solid, non-fading colors
- fast-to-light, non-fading dyes
- easily recognized at a distance
- easily removed and transferred

If you will specify the can diameter; and the color, width and quantity of bands desired; we will submit samples and quote prices.

UNITED ELASTIC CORPORATION
EASTHAMPTON, MASS.
Sales Agent:
Roy Schrimshire
P. O. Box 906, Columbus, Georgia

Equipment briefs

Pedal-operated lift and drum-stacker for light use. A multi-purpose lift and drum stacker, for use in plants or departments requiring occasional drum stacking in combination with other materials-handling, combines forks, platform, and drum handling attachments with a low-cost basic pedal-operated, straddle-type lift truck. For regular use, the forged steel forks provide capacity to lift 1000 lb to a height of 68". When the need arises, a steel platform is slipped over the forks to provide a portable loading platform or elevator for small or bulky containers. The drum-stacking attachment enables one man to stack 55-gallon drums weighing up to 500 lb.

The American Pulley Co., 4200 Wissahickon Ave., Phila. 29, Pa.

Do you want more data? Write supplier or use card on page 193; list M-201

Mounting pads reduce loom noise. A mounting pad, designed specifically for use under looms, and called "Giant Grip" Air-Loc, can be used without bolts or cement to reduce transmitted vibration and noise up to 85%.

Clark, Cutler, McDermott Co., Franklin, Mass.

Do you want more data? Write supplier or use card on page 193; list M-202

Decimal points positioned automatically by calculator. At the touch of a single key, the "Deci-Magic" automatically sets decimal points in the keyboard and all four dials and automatically positions its carriage in readiness for any type of calculation. All entries to the keyboard are around the selected decimal point. All answers displayed in the carriage dials are automatically pointed off correctly at the conclusion of every calculation. All clearances of keyboard and dials during and upon completion of a problem are fully automatic, with selective non-clearance for the keyboard and each of the four dials by means of individual "touch-set" locks.

Marchant Calculators, Inc., 1475 Powell St., Oakland 8, Calif.

Do you want more data? Write supplier or use card on page 193; list M-203

Solvent detergent with safety features. A clear solvent designed to remove grease, oil, and smut from machinery where water cannot be used, Composition No. 117 is equally effective in cleaning electrical equipment. The composition may be used full strength, applied by brush, or immersion, or a non-atomizing spray. No rinse is necessary — parts may be blown dry with compressed air.

Oakite Products, Inc., 52D Rector Street, New York 6, N. Y.

Do you want more data? Write supplier or use card on page 193; list M-204

Ultrasonic cleaner for small parts. An ultrasonic cleaning apparatus, Model AP-10-B, is a small, compact instrument, designed specifically for bench-top operation in the washing of delicate, intricate parts that must be "surgically" clean — such as watch mechanisms, instrument components, small and miniature ball-bearings, electronic parts, etc. Tanks are of 1-pint, 1-quart, or ½-gallon capacity, giving a maximum effective cleaning area of 18 square inches. Two of the smaller tanks may be operated simultaneously, and two of the larger tanks alternately, depending on tank size specified.

Branson Ultrasonic Corp., 37 Brown House Rd., Stamford, Conn.

Do you want more data? Write supplier or use card on page 193; list M-205

Space-saving first aid station for plant-wide use. A first aid wall-mounting cabinet small enough to mount close to hazardous areas, yet large enough to hold all

necessary first aid items, is especially useful where fast, immediate first aid treatment must be given — as with caustic burns of the eyes and skin — to prevent serious organic injury. Each of the cabinet's two doors is fitted with a positive-action catch that cannot open as a result of nearby vibration.

General Scientific Equipment Co., P. O. Box 3038, Phila. 50, Pa.

Do you want more data? Write supplier or use card on page 193; list M-206

Sewing lubricant reduces needle cutting. Sewing Lubricant 952 reduces the needle cutting of tightly woven and heavily finished fabrics. It may be applied by all conventional finishing processes, is compatible with most other finishing agents, and retains its properties even after high temperature setting and curing operations.

Proctor Chemical Co., Salisbury, N. C.

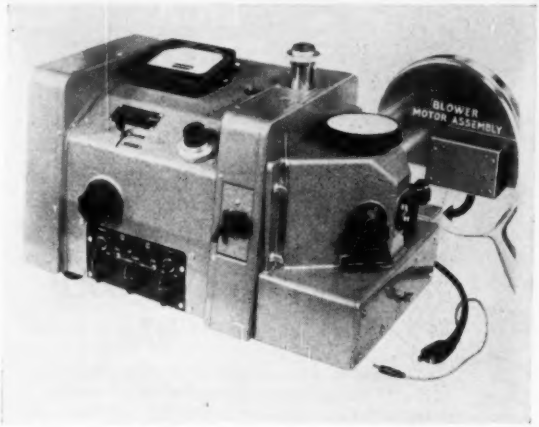
Do you want more data? Write supplier or use card on page 193; list M-207

Emergency lantern. Powered by a two-in-one battery (two 6-volt lantern batteries in a self-contained unit) giving up to four times the life of the ordinary lantern battery, and using an ordinary auto lamp bulb, an emergency lantern is built for all-weather conditions. The lantern head attaches to the battery case by two screw caps. There are no wires to connect or spring contacts to make.

Burgess Battery Co., Freeport, Ill.

Do you want more data? Write supplier or use card on page 193; list M-208

Air-cooled colorimeter with air filter. Featuring a cooling system and air filter which can also be installed on existing models, the Model C Color-Eye is a colorimeter designed for quality control of industrial colors in raw materials and in finished products. It performs the dual



functions of an abridged spectrophotometer and a tristimulus colorphotometer in analyzing color formulations, determining metameric conditions, and quickly measuring color differences in hue, value, and chroma.

Instrument Development Laboratories, Inc., 67 Mechanic St., Attleboro, Mass.

Do you want more data? Write supplier or use card on page 193; list M-209

Portable coolant system requires no drip pans. A coolant system, Trico-Mist, is designed to direct a cooling spray onto the cutting edges of tools and work while drilling, tapping, milling, sawing, grinding, etc. The mist absorbs heat and thereby increases production and speeds,

A New and Better Stainless Steel Dye Sleeve for B-C Winders

The heavier gauge stainless steel used in this new sleeve supplies its own rigidity and eliminates ribbing. This permits greater hole area and assures much faster dye penetration. Beaded and flared bottom prevents yarn slippage. This simplified construction saves up to 15% in initial cost. Greater strength gives longer service. All sleeves are perfectly sized for roundness and the holes are evenly spaced for uniform dye penetration. Ends are 100% level and rounded to prevent snagging. All tubes are pacivated for corrosion protection. Write today for samples and quotations.

Several hundred thousand sleeves of the type shown at the right are now giving superior service on Foster, Abbott, and Universal Winders.

TOOL SERVICE ENGINEERING CO.
309 W. Crowell St. Monroe, N. C.

Static is a serious problem in every plant . . . but, it can be completely knocked out . . . quickly and at low cost, with the **Herbert Oxy Cold Bar!** This easily installed, completely efficient device, eliminates Static, instantly and permanently. Absolutely **safe** and **guaranteed** to operate properly on all materials. Ends slow-downs and production delays caused by static.

Can be easily installed on any machine, old or new, and then pays for itself through improved production, more operating profit. **Low** in cost, **high** in efficiency. Send us specifications of your machine for full information and our proposal.

HERBERT PRODUCTS INC.
74-34 JAMAICA AVE. • WOODHAVEN 21, N. Y

Industrial Engineers

MODERNIZATION PROGRAMS
PLANT LAYOUTS
MANAGEMENT PROBLEMS
WORK LOAD STUDIES
COST REDUCTION REPORTS
COST SYSTEMS SPECIAL REPORTS

Specializing in Textiles for over 40 Years

RALPH E. LOPER CO.
GREENVILLE, S. C. Dial 3-3968
FALL RIVER, MASS. Dial OSborne 6-8261

Avondale Yarns
sold through Comer-Avondale Mills, Inc., Sylacauga, Alabama
Quality carded cotton knitting yarns
Uniformity • Superior performance
Offices in Boston, New York, Charlotte, Philadelphia, Chattanooga, Reading, Chicago

permits finer finishes and accuracy, and effects savings in wasted power and tool life. Other advantages: permits heavier roughing cuts; prevents checking of hardened steel and warpage of work; gives up to 80% longer saw life; 5 to 10 times longer diamond wheel life; low air consumption (0.04 cfm); and low coolant consumption (one gallon lasts 14 hours under average use).

Trico Fuse Mfg. Co., 2948 N. 5th St., Milwaukee 12, Wis.

Do you want more data? Write supplier or use card on page 193; list M-210

Save staples, time, and effort with hand stapler. Double and triple thicknesses of corrugated or solid fiber board can be fastened with equal ease by a hand stapler which makes use of large metallic staples to effect a saving in the labor and material costs incidental to carton sealing. Once closed by the stapler, the cartons are tamper-proof (cannot be reclosed without detection) and may be reused. Each major component of the machine is interchangeable with pneumatic stapling equipment made by the same manufacturer. The stapler makes use of actuated anvils which actually pierce the material to be sealed in order to receive and clinch the points of the heavy staple.

Container Stapling Corp., P.O. Box 247, Herrin, Ill.

Do you want more data? Write supplier or use card on page 193; list M-211

Cut label printing and inventory costs with machine. The Model 80 label printing machine permits the user to print product and content identification labels as they are needed. No larger than an electric typewriter, it prints 105 labels per minute, complete with variable information, from inexpensive rubber plates made to the user's specifications. Variable information such as size, weight, color, date, etc., is printed from "sticky-back" rubber types that can be added and removed from the plate at any time.

Weber Marking Systems, Div. of Weber Addressing Machine Co., Mount Prospect, Ill.

Do you want more data? Write supplier or use card on page 193; list M-212

Oilers maintain constant level and seal out dust. Oilers which maintain constant oil level in ring-oiled and antifriction bearings, gear boxes, pump housings, moistening pads, etc., will guard against dust pollution from the atmosphere. Transparent reservoirs permit a visual check of oil supply at all times; and since the oil in the reservoir will assume the same color as that of the bearing housing, it affords a visual check on the condition of the oil.

Oil-Rite Corp., 2318 Waldo Blvd., Manitowoc, Wis.

Do you want more data? Write supplier or use card on page 193; list M-213

Retarder levels dyes on Orlon. Retarder DO is a quaternary ammonium compound especially developed for use in the level application of cationic dyes to the whiter, more dyeable type 42 and type 39 Orlon acrylic fiber. Miscible with water in all proportions, the product can be stirred into water at 80 F to 120 F with mild agitation to form uniform solutions. Stable in storage, it is unaffected by freezing.

E. I. du Pont de Nemours & Co., Inc., Dyes and Chemicals Div., Wilmington 98, Del.

Do you want more data? Write supplier or use card on page 193; list M-214

Casters with V-grooved wheels for use on tracks are offered in both swivel and rigid models with semi-steel wheels. The grooved wheels can be operated on floor surfaces as well as on tracks. Available in heavy duty semi-steel models with 6" x 2" wheels, and extra heavy duty forged steel models with 8" x 2¾" wheels. All are

equipped with roller bearings and grease fittings. Wheels only are also offered.

The Hamilton Caster & Mfg. Co., Hamilton, Ohio.

Do you want more data? Write supplier or use card on page 193; list M-215

Water resistant contact bond cement. Designed to meet a variety of bonding conditions, especially where large areas are involved, Pliotac is recommended for joining any combination of plywood, plastic, glass fabric, natural fiber textiles, etc. The contact adhesive has good bond strength, excellent tack, low level dry film odor, remains permanently flexible after application, and is water and moisture resistant.

Goodyear Tire & Rubber Co., Inc., Chemical Products Div., Akron, Ohio.

Do you want more data? Write supplier or use card on page 193; list M-216

Lubrication unit supplies oil fog to machines. A small Lubro-Control unit, 33AG-4, supplies air-actuated feed mechanisms, chucks, clutches, brakes and other air-operated parts of machine tools with filtered air, regulated air pressure, and lubrication in the form of micron-size oil fog. The fog can be transported great distances with negligible precipitation in air lines, and can be appropriately distributed to multiple lubrication points.

C. A. Norgren Co., 3400 South Elati St., Englewood, Colorado.

Do you want more data? Write supplier or use card on page 193; list M-217

Leveling agent for vat and direct dyes Lyogen DK, when added to the direct dyebath, levels the varying rates of strike of the different dyestuffs in the bath. Its use makes it possible to obtain desired shades and properties without being restricted in choice of dyestuffs by differences in their strike. The fastness, tone, and dischargeability of direct dyestuffs are not influenced in any way by the agent. It does not interfere with subsequent processes. The agent works in a similar manner on vat dyes. For leveling and penetration it is effective in small concentrations. If applied at higher concentrations in a blank vat, it may also be used as a stripping agent.

Sandoz Chemical Works, Inc., 61-63 Van Dam St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 193; list M-218

Four premetalized dyes for wool, silk, and nylon — Lanasyn Blue BRL, Brown GL, Orange RL, and Yellow 2GL — are available. Superior general fastness is claimed for colors produced on textiles by them.

Sandoz Chemical Works, Inc., 61-63 Van Dam St., New York 13, N. Y.

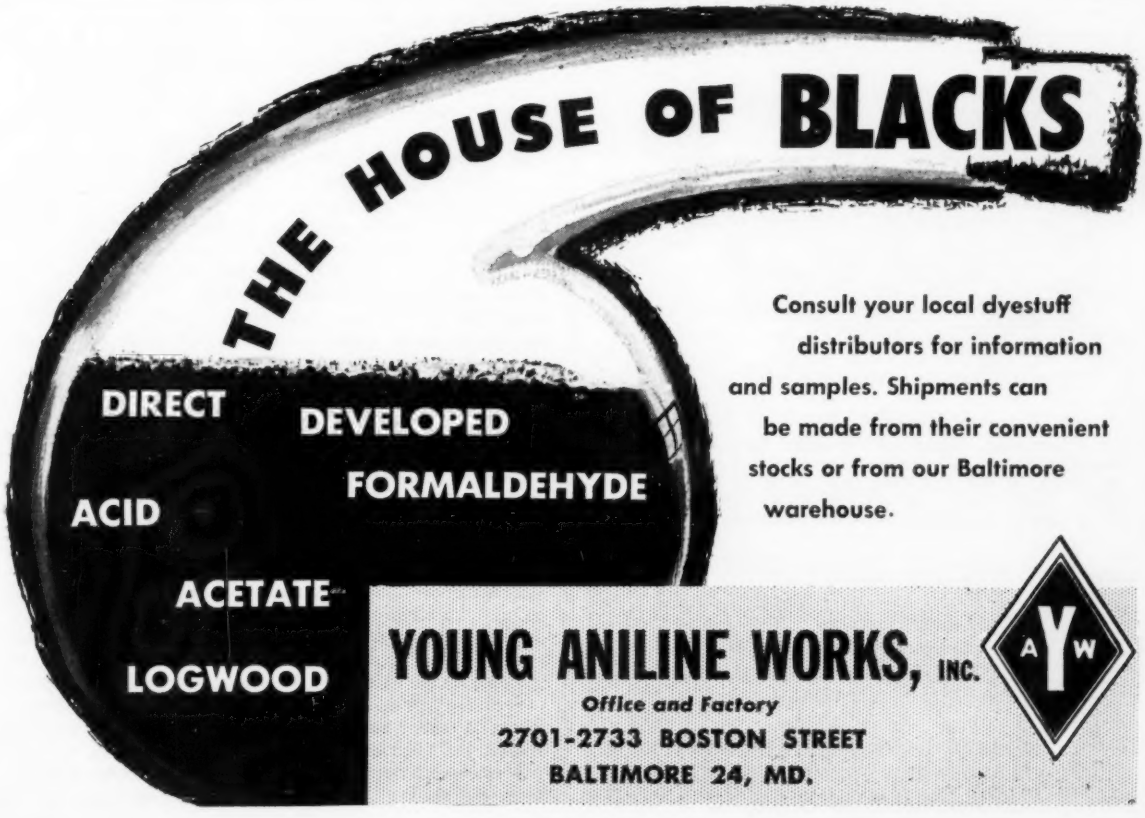
Do you want more data? Write supplier or use card on page 193; list M-219

Pipe and tubing for corrosive liquids. Teflon-lined steel pipe is available in 2" size; Teflon pipe is available in sizes up to 4" diameter. It is also available in rods, tubes, and special machine parts. The material is inert to practically all chemicals, retains its toughness and flexibility over a wide range of temperatures, resists shock and abrasion, withstands 150 psi over a wide range of temperatures, and is capable of continuous service to 500 F.

Haveg Industries, Inc., 900 Greenbank Rd., Wilmington 8, Del.

Do you want more data? Write supplier or use card on page 193; list M-220

By-pass valves simplify maintenance. A line of three-



TREATED APRONS LAST LONGER!

In

North Carolina

and

Virginia

We are represented

by

Mr. Chalmers H. White
Charlotte, N. C.

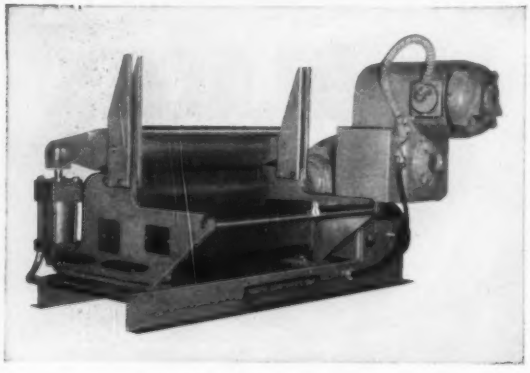
Chal is a good guy to know in the Textile field as he is a spinning room specialist. Besides our company he represents:

Marquette Metal Products Co.
Textile Bobbin Works
Ragan Ring Co. and
Kearney Mfg. Co.

Contact him for our fine Resin Treated Long Draft Aprons.

Russell A. Singleton & Sons
Blanco, Texas

P. S. This Rogues Gallery will be continued next month.



LABORATORY PADDER

4"D X 18" RUBB., HYCAR; OR S/S ROLLS; S/S TWO POSITION REMOVABLE TANK; ONE OR TWO DIPS; BOTT. ROLL IMMERSED OR CLEAR; LET OFF AND WIND UP BARS; 10 TO 1 VAR. SPEED DRIVE; COMPLETELY WIRED AND PIPED; MOUNTED ON STEEL BASE; DUPLICATES RESULTS OF 15 TON MACHINE.

BIRCH BROTHERS, INC.

Harold W. Birch Clifford W. Birch, Jr.

Phone: PRospect 6-3512
SOMERVILLE 43, MASS.
Dyeing and Finishing Machinery and Mill Sewing Machines

Southern Representative:
JOHN C. COSBY, P. O. Box 212, Phone: Greenville 5-5926 Greenville, S. C.

way by-pass valves designed for the accurate control of liquid flow offers constant valve capacity regardless of the position of the inner valve. Flow can be directed to either of two outlets as required. These by-pass valves are designed to be 100 per cent tight closing, a feature which makes these valves suitable for diverting applications which would ordinarily require the use of two separate valves. Maintenance is greatly simplified by a construction feature that makes it possible to change the discs and seat rings without removing the entire valve from the pipe line. Slamming and water hammer noise are eliminated by seating both discs against the flow.

Johnson Service Co., Milwaukee 1, Wis.

Do you want more data? Write supplier or use card on page 193; list M-221

Steam trap has built-in strainer for fast cleaning. The 140-S Hydro-Flex steam trap is suitable for working pressures up to 150 psi. Equipped with a built-in vertical strainer mounted for easy and fast cleaning, the trap is made of semi-steel with stainless steel working parts. Of small size and light weight, the traps operate efficiently under all load conditions.

Strong, Carlisle & Co., Cleveland 13, Ohio.

Do you want more data? Write supplier or use card on page 193; list M-222

Kits simplify modification of magnetic starters. Six kits, built for modifying across-the-line non-reversing, combination, or reversing starters, are designed so that modification can be made in a matter of minutes using only a screwdriver. The standard General Electric magnetic starter may be modified to fit any of six special conditions by installing a push button or selector switch in the starter cover, changing fuse clips on the disconnect switch, changing the coil, adding a third over-load relay, or adding an auxiliary interlock kit. These modifications are for starters in open or in NEMA Type 1 enclosures and for NEMA Sizes 0 through 4.

General Electric, General Purpose Dept., Schnectady 5, N. Y.

Do you want more data? Write supplier or use card on page 193; list M-223

Economy-sized flocking machine for efficiency. A small-size flocking machine built for the textile, automotive, plastics industries, etc., allows one operator to handle the adhesive spray gun and flock discharge hose simultaneously. The unit holds ten pounds of flock, has a tilting hopper to allow quick removal of unused flock, a long-stroke magnetic feed vibrator, and a non-clogging blower. Self-contained, operates on a single 110-volt motor, requires no maintenance other than cleaning and yearly oiling, weighs only 80 lb.

Progressive Equipment Co., 8625-29 Mackinaw at Grand River, Detroit 4, Mich.

Do you want more data? Write supplier or use card on page 193; list M-224

Chlorine detector gives alarm at 3 ppm. The W&T Series A-689 solvay chlorine detector is a device for warning of chlorine concentrations in air in excess of a preselected limit. Concentrations of 3 ppm will trigger the alarm. Some suggested installations are in textile, paper, and water treatment plants — wherever chlorine is stored or used. Available in wall or panel mounting styles, the detector can be located at any convenient point with respect to the areas being checked, provided the sum of the lengths of the inlet and discharge sampling lines does not exceed 200 ft. Alarm can be visible, such as colored lights, or the detector used to actuate external audible system.

Wallace & Tiernan Inc., 25 Main St., Belleville 9, N. J.

Do you want more data? Write supplier or use card on page 193; list M-225

Anti-static agent good for life of garment. An anti-static agent, Aston LT, will finish efficiently every type of fiber, and give fabric protection for the life of the garment, regardless of how often it is washed or dry-cleaned. Utilizing principles of polymer chemistry, the agent surrounds every fiber with an invisible sheath and gives the surface the properties of a hydrophilic fiber. The hydrophobic core of the fiber under the protective layer retains its functional properties. Thus, fibers so treated combine the desirable properties of both types of fibers — the comfort, absorbency, and resistance to static build-up of the natural fibers, and the strength, dimensional stability, and crease resistance of the synthetic.

Onyx Oil and Chemical Co., Warren & Morris Streets, Jersey City, N. J.

Do you want more data? Write supplier or use card on page 193; list M-226

Air control for fractional hp drives. An air control system for Graham 29 Series transmissions can be had on drives delivering speeds from any desired maximum down to zero, and if desired, reverse. The pneumatic control operates on a 3 to 5 psi signal with control signal originating from liquid level, pressure or flow rate devices, or a variety of other transducers. The control signal may also be transmitted from any one of the leading makes of pneumatic recorder controllers. The drive may be coupled or belt connected to the driving means. High accuracy setting and maintenance of speed over the entire range are featured.

Graham Transmissions Inc., Menomonee Falls, Wis.

Do you want more data? Write supplier or use card on page 193; list M-227

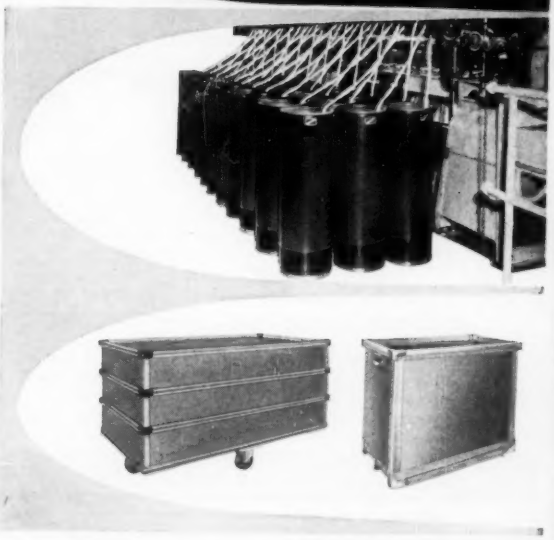
Stored pressure fire extinguisher uses water. A stored pressure water fire extinguisher has a 2½ gallon capacity for use on Class A fires (wood, paper, rags, etc.). The stream of water is released by operating the squeeze grip carrying handle. The water stream, which can be turned off at will, has a range from start to finish of 35 to 40 feet. After use the unit is recharged by replacing the water and pressurizing with compressed air to 100 psi. A tricolor pressure gauge permits speedy determination of the tank pressure. Available in three shells—stainless steel, brass, and chromium plated brass.

Ansul Chemical Co., Marinette, Wis.

Do you want more data? Write supplier or use card on page 193; list M-228

Isocyanate agents for textile bonding. Two isocyanates, PAPI (Polyaryl Polyisocyanate) and BuNCO (n-Butylisocyanate), have textile applications in the bonding and coating of fabrics. PAPI offers advantages in the manufacture of neoprene-coated tarpaulins, and rubber coated protective clothing. It also improves the properties of resins, increases the resiliency of and raises the heat distortion point of urethane flexible and rigid foams. BuNCO offers an immediate and simple route to substituted ureas and urethanes for numerous uses, and —by virtue of its reactivity and hydrophobic characteristics — it is expected to find application in the waterproof-

high speed production
demands
KENNETT RECEPTACLES



Modern textile processing sets standards high for companion equipment needed to move textiles-in-process safely through the mill.

The versatile family of KENNETT Prime Movers is National's answer to the industry's demand for a safe, steady, automatic flow of production. There are good reasons why more and more textile men look to "Kennett" as the industry standard in receptacles.

FULL LINE—There's a standard or special Kennett Receptacle to fit practically every textile handling job —safely—efficiently—economically.

STRONG—National's hard vulcanized fibre is the magic material that insures years of hard mill service. It's strong, tough, resilient, and durable.

SMOOTH—Kennett Receptacles are glass-smooth inside and out. Will not crack, dent, splinter, rust or corrode. The perfect container for your most delicate fibres.

LIGHT—Mill hands prefer these neat, compact, lightweight Kennetts. Easy to lift—easy to move—easy to clean!

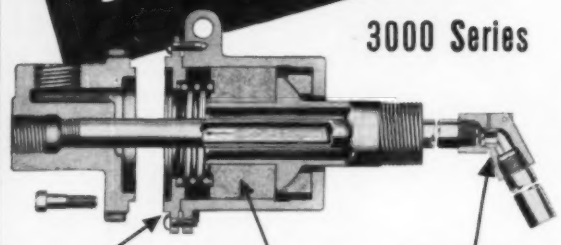
FREE BOOKLET: *Materials Handling In Textile Plants is a new folder worth having—write for it!*

NATIONAL VULCANIZED FIBRE CO.
WILMINGTON 99, DELAWARE

ALSO MANUFACTURERS OF NATIONAL VULCANIZED FIBRE, PHENOLITE LAMINATED PLASTIC, PEERLESS INSULATION, VUL-COT WASTEBASKETS
NEW DIMENSIONS IN DESIGN AND SERVICE TO THE TEXTILE INDUSTRY

Johnson Joint with SYPHON ELBOW

3000 Series



ASSEMBLY PLATE — Holds internal parts in position when head is removed.

SELF-SUPPORTING — Needs no external supports of any kind.

SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

WRITE FOR FACTS

on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

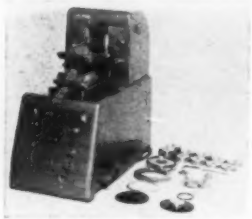
The Johnson Corporation

815 Wood St., Three Rivers, Mich.

The CSI Stoll Quartermaster

UNIVERSAL

WEAR TESTER



Model CS-22C

For measuring:

- **SURFACE ABRASION**
- **FLEX ABRASION**
- **EDGE ABRASION**
- **PILLING**

Reports by leading companies throughout industry have proven that the CSI Stoll Quartermaster Universal Wear Tester is a vital factor in both research and quality control. This multipurpose instrument will measure the resistance to surface, flex and edge abrasion of such materials as woven and knitted fabrics, napped and pile fabrics, hosiery, felt, non-woven and coated fabrics, yarns, threads, cordage, plastic films, rubber sheeting, leather, paper and many others. ASTM Designations:

D1175-55T "Test for Abrasion Resistance of Textile Fabrics."
D1379-55T "Test for Abrasion Resistance of Textile Yarns."
D1375-55T "Test for Pilling Propensity of Textile Fabrics."

Federal Specifications:
CCC-T-191b Method No. 5300.
CCC-T-191b Method No. 5302.

As our name implies we also welcome the opportunity to work on custom design and manufacture of testing instruments of all types for individual and general needs.

CUSTOM SCIENTIFIC INSTRUMENTS, INC.

541 Devon Street — Kearny, N. J.

ing of textiles and proteins, and in increasing the wear resistance of wool.

The Carwin Co., North Haven, Conn.

Do you want more data? Write supplier or use card on page 193; list M-229

Rubber base acrylic masonry coating. A rubber base masonry paint, Rubber-Coat, is now available in 10 colors. The paint, now fortified by the addition of acrylics to the formulation, can be applied over damp surfaces. The dampness in the wall passes out through the paint film without chipping or peeling, and yet the paint film acts as a water shield to reduce moisture penetration. The paint is resistant to mildew, fire, and acid and alkali fumes.

The Wilbur & Williams Co., Boston 35, Mass.

Do you want more data? Write supplier or use card on page 193; list M-230

Developing tank for electron microscopy. For the electron microscopist is a plate developing tank, Model CS-6, of stainless steel with an over-all specification of 11" x 5" x 12". The cylinders are of Pyrex with covers, are 2¼" in diameter, and will handle up to 2" x 10" plates. The tank is so arranged as to control the temperature of the solution by means of cooling coils.

Custom Scientific Instruments, Inc., Kearny, N. J.

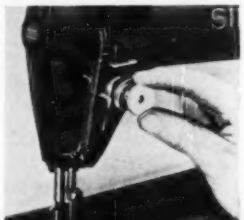
Do you want more data? Write supplier or use card on page 193; list M-231

Black-light lamp has spot or flood beam. The Blak-Ray Model B-100 provides long wave ultraviolet radiation (3660 angstrom units) for laboratory research and inspection. A 5" rounded, heat-resistant, red purple filter, specially selected to transmit ultra-violet light, blocks out visible light. The spot bulb emits a beam which will fluoresce an area 15' in diameter from a distance of 30'; flood bulb will activate an area 30' in diameter from a distance of 30'. The lamp head can be rotated through an arc of 180 degrees or detached from the base and carried by a pistol-grip handle. The unit uses a 100-watt bulb, and carries a "D" ring to simplify mounting it on a wall, partition, booth, etc.

Black Light Corp. of America, San Gabriel, Calif.

Do you want more data? Write supplier or use card on page 193; list M-232

Sewing tension disk does not untwist yarns. A plastic disk called "Roto-trol" uses rotary motion to control thread tension on sewing machines without untwisting or otherwise damaging the thread. The disk will outlast the conventional steel tension disk, and never requires lubrication. The unit transports the top thread to the needle with complete smoothness without varying the tension. The tension disk can be installed quickly by the sewing machine operative.



Sewmation, Inc., 808 Broadway, New York 3, N. Y.

Do you want more data? Write supplier or use card on page 193; list M-233

Truck-actuated dock board is safe to use. A recent design of the Hi-Lo automatic dockboard features ease of installation, smoothness of operation, safety, and reduced pit installation costs. A cross traffic lock supports the ramp in dock level position; a positive safety stop prevents free-falling of the dock board if a truck should

pull away and leave the lip unsupported. Two adjustable operating arms assure smooth operation.

The Kelley Co., Inc., 316 East Silver Spring Dr., Milwaukee 17, Wis.

Do you want more data? Write supplier or use card on page 193; list M-234

Variable "narrow range" speed drives for exact register. Designed for register control applications in the printing, packaging, textile industry, etc., or for any application where extreme accuracy in metering and proportioning is required, the Speed Corrector variable speed drive provides exact register or feed control. A micrometer dial provides 400 graduations in producing a speed variation of only plus or minus 15% of the input speed. The drive is so accurate that for many applications auxiliary differentials and feed back systems are not required in providing exact register or feed control.

Graham Transmissions, Inc., Menomonee Falls, Wis.

Do you want more data? Write supplier or use card on page 193; list M-235

One man operates automatic retractable conveyor loader. The manpower savings made possible by the Lanceveyor amounts to as much as 6000 feet of walking for a conventional 10-ton load. The completely automatic conveyor can be set into the user's present system; and by means of the automatic controls may be extended through dock doors and onto trucks. The conveyor can be raised or lowered to any height from truck bed to truck top by push button control. It also can be inclined to any angle required.

Lance Iron Works, 310R3, Chicago Heights, Ill.

Do you want more data? Write supplier or use card on page 193; list M-236

Acid dyestuffs for printing and dyeing of wool and silk. Five Basolan fast dyestuffs, acid colors of extreme brilliance of shade and good all round fastness properties, are for dyeing and printing of both silk and wool. Selected types are also suitable in the dyeing and printing of nylon. On the latter, they produce shades of extreme fastness to light and washing. The dyes: Basolan Fast Yellow GL, Yellow GRL, Orange GL, Orange RRL, and Red GL.

Nova Chemical Corp., 153 Waverly Pl., New York 14, N. Y.

Do you want more data? Write supplier or use card on page 193; list M-237

New books

Industrial Vision is a comprehensive analysis and review of the subject designed to familiarize the reader with the visual problems and characteristics of occupational groups. The book illustrates the relationship of vision, visual testing, and visual skills to industrial performance, production, and safety. An interpretation of vision is made in terms of visual acuity, extra-ocular muscle imbalance, color vision, stereopsis, and visual field anomalies. Available from Chilton Co., Chestnut and 56th Sts., Phila. 39, Pa. Price: $10.00.

Technology of Dyeing and Textile Processing (in German language) is a universal manual and reference book for the dyeing and textile processing trades, with extensive literature references, lists of the most important dyestuffs and textile auxiliaries (with old and new names of the products of the former I.G. and the succeeding firms), register of ranges of products, and lists of the dyeing machines and equipment developed in the last decades, with special consideration given to those for

The Laurel Leaf

BUSINESS MAGAZINE EDITION

If you are a user or a potential user of Flame Retardants, why not explore the possibility of using one or more of these Laurel quality products in your plant? Chances are excellent that one of them will provide the answer to your problem:

FLAME RETARDANT 527C

Flame Retardant 527C is an inorganic product possessing excellent flame extinguishing properties. It is of high activity, non-corrosive to equipment, and low in cost. It is an ideal product for treating fabrics which are borderline in passing the tests required in the Federal Flammable Fabrics Act. These fabrics such as lightly napped goods, when treated with only a few percent of Laurel Flame Retardant 527C will generally pass the requirements, whereas the untreated fabric will not. Laurel Flame Retardant 527C will not cause efflorescence under normal conditions of fabric storage and use, and will not affect most dyestuffs.

PYROSAN B

Laurel Pyrosan B is similar to Flame Retardant 527C, except that it has been modified to give a softer, more pleasing hand. This is desirable where the amount of chemical required is large and a certain degree of boardiness results from the high solids add-on. Laurel Pyrosan B will eliminate this condition and leave the fabric with the same soft hand it had prior to treatment. It does not crystallize or settle in storage.

PYROSAN A

Laurel Pyrosan A is a different kind of flame retardant. It is organic in nature. It eliminates the after-flaming at once, and after-glowing within a second or two after the source of fire is removed. It does not crystallize or settle in storage. Pyrosan A will impart a soft pleasing hand which is different from the boardy or saggy hand characteristic of many flame retardants. Fabrics treated with this Laurel quality product show no tendency toward efflorescence or shade change. It is especially useful in the treating of pile fabrics where the afterglow extinguishing properties and the soft hand are particularly desirable.

Write for generous samples and recommendations.

Laurel Brand

Laurel SOAP MANUFACTURING CO., INC.
TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.

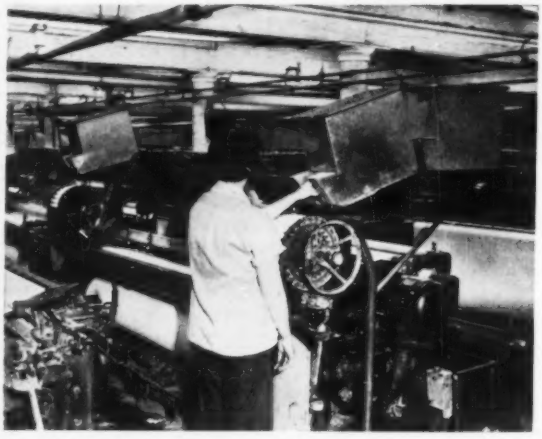
Warehouses: Paterson, N. J., Chattanooga, Tenn., Charlotte, N. C.

continuous dyeing processes. Available from Overseas Publishers' Representatives, 66 Beaver St., New York 4, N. Y. Price: $17.56.

The fifth edition of *The Condensed Chemical Dictionary*, now available from Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y., has more than 30,000 entries. Here, in a practical book for busy chemists, engineers, consultants, purchasing agents, executives, etc., is included data on the chemical and physical properties of chemicals and raw materials; newest information on containers, shipping regulations, and safety instructions; and new uses of chemicals in nuclear energy, chemotherapy, and other fields of current interest. Many new cross references help clarify the confusion often associated with chemicals and their synonyms. Price: $12.50.

A *Dictionary of Textile Terms*, in both German and English, provides a source for the current terminology in textile technology, industry, and trade. It comprises the most widely used terms in the various textile industries and allied fields. In arranging the material, the chief aims have been clarity and convenience, avoiding cross references as far as possible. On the assumption that users of the dictionary have a working knowledge of both languages, no references to grammar are made, and only the genders of German substantives are indicated. In general British orthography has been used; specifically American terms are indicated. Available from Pergamon Press, Inc., 122 East 55th St., New York 22, N. Y.

"FROM 480 BOBBINS PER HOUR TO 1050 PER HOUR"*



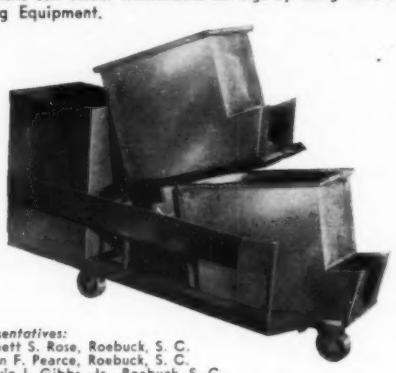
This photograph shows our equipment in use at one of the large weave rooms in one of the South's most progressive textile plants. This new Filling Box mounted over the loom is designed to reduce costs of handling filling at the batteries. (PATENT APPLIED FOR)

SPECIAL — Ask for information on our STANDS AND HINGED RACKS WITH EASY DISPENSING SPOUT to hold QUILLER BOXES IN POSITION

FULL INFORMATION ABOUT OUR EQUIPMENT WILL BE FURNISHED ON REQUEST.

*After installing BENNETT ROSE COMPANY'S
NEW TYPE BATTERY FILLING EQUIPMENT

One Southern Mill increased plugging from 480 bobbins per hour to 1050 per hour on Quill Yarn and from 480 to 860 bobbins per hour on Spun Yarn.
This System has been checked and recommended by a prominent Industrial Engineering Firm who advised that cotton mills can effect tremendous savings by using Rose Battery Filling Equipment.



Representatives:
Bennett S. Rose, Roebuck, S. C.
Dixon F. Pearce, Roebuck, S. C.
Melvin I. Gibbs, Jr., Roebuck, S. C.
Richard C. Hurley, Box 2690, Charlotte, N. C.
Moreland Industrial Products, Inc., Greensboro, N. C.
Thos. R. O'Neil, Box 975, Lowell, Mass.
Wm. R. Fox, Box 380, Providence, R. I.
L. O. Talley, Mexia, Texas
H. B. "Bcoch" Askew, Griffin, Ga.
Harris Ford, 501 E. North St., Greenville, S. C.
Southeastern Loom & Machine Works, Greenville, S. C.

Post Office Box 8
ROEBUCK, SOUTH CAROLINA

BENNETT ROSE COMPANY

Telephone
Spartanburg 3-9223

STATIC

It's wasteful. it's costly! But the SIMCO *"Midget"* Static Eliminator *guarantees* to be effective—at the lowest possible cost. Standard and shockless bars for every application. Equip now.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

W. R. C. Smith Publishing Co.
Dept. T-12A
806 Peachtree St., N. E.
Atlanta 5, Georgia

Please enter / renew my subscription to TEXTILE INDUSTRIES for two years.

Name _____ Title _____
Address _____
City _____ State _____
Company Name _____

☐ **Enclosed find $3.00** ☐ **Bill me for $3.00**

*Trade Mark Reg. Pending
†du Pont Polyester fiber

AMACRON RED VIOLET LS

AMACRON ORANGE LS

Glorify your Dacrons with AMACRON* DYES

An all-new range of SUNFAST colors created specifically for DACRON†

AMACRON BLUE RLS

AMACRON RED BLS

AMACRON YELLOW LS

Here at last is a new range of dyes expressly created for Dacron. After years of intensive research, A.A.P. has successfully perfected a group of new colors offering the fastness properties found most essential in the dyeing and printing of Dacron fabric and yarn.

Dyers, finishers, and printers all are finding that the AMACRONS assure amazing sunfastness, together with excellent resistance to washing and sublimation. AMACRON Dyes may be applied to Dacron either in pressure equipment or in open equipment by conventional methods using carriers as needed. All of the AMACRON dyestuffs are distinctively pleasing as self-shades and mutually compatible in mixtures for the production of mode shades of tan, green, brown, grey or black.

For a free copy of our informative brochure, **Dyeing of Dacron,** and data tailored to your individual requirements, consult our nearest branch. A.A.P. technicians will be happy to arrange a trial run at your convenience.

AAP

AMERICAN ANILINE PRODUCTS, INC.

50 Union Square, New York 3, N. Y.
Plant: Lock Haven, Pa.

Branches:
Providence, R. I. • Philadelphia, Pa.
Paterson, N. J. • Chicago, Ill.
Charlotte, N. C. • Chattanooga, Tenn.
Columbus, Ga. • Los Angeles, Cal.

Dominion Anilines & Chemicals, Ltd.
Toronto, Canada • Montreal, Canada

Let
WEST POINT
Supply Your
LOOM BEAMS
Standard or Special

Prompt Quotations on Delivery and Price

LOOM BEAM HEADS

- Cast iron heads with cast tooth gear or cut tooth gear.
- With or without recess for beam barrel.
- Cast iron heads with friction drum for friction let-off.
- Steel plate heads with cast iron gear or friction drum.
- Many standard patterns available for prompt service. All sizes—18″ to 36″ diameter.
- Special heads to your specifications.
- Heads made of high grade cast iron; well molded teeth if sand tooth—or accurately machined if cut tooth.

LOOM BEAM BARRELS

- Long-life aluminum beam barrels carried in stock.
- Wooden beam barrels to your specifications.

ONLY WEST POINT MAKES ALL 7 SLASHERS

WEST POINT FOUNDRY & MACHINE CO.

WEST POINT, GEORGIA

TI'S INFORMATION CENTER

BOOKLETS
NEW EQUIPMENT
ADVERTISEMENTS

Use this opportunity to keep abreast of new information dealing with machinery, equipment, supplies and services available to your mill.
To obtain more information on advertisements, print the name of the advertiser in the space provided on the card below.
Free booklets and more information on new equipment items may be had by entering their key numbers in the space designated for this use.
This service is made possible by the advertisers of TEXTILE INDUSTRIES as an aid to mill men who want to keep well informed on new developments in the industry. We cannot, however, extend this service to you unless you print or write legibly your name and position, the name of your firm, and its address on the card.
Four cards are provided in case others in your plant would like information . . . and TEXTILE INDUSTRIES pays the postman!

DECEMBER, 1956

Please send, without obligation, additional information on New Equipment and booklets described (give Key numbers) .....
.....
.....

Please send more information on advertisements (give Company Name)
.....
.....

Name ..... Position .....
Company Name .....
Address .....
City ..... State .....

DECEMBER, 1956

Please send, without obligation, additional information on New Equipment and booklets described (give Key numbers) .....
.....
.....

Please send more information on advertisements (give Company Name)
.....
.....

Name ..... Position .....
Company Name .....
Address .....
City ..... State .....

DECEMBER, 1956

Please send, without obligation, additional information on New Equipment and booklets described (give Key numbers) .....
.....
.....

Please send more information on advertisements (give Company Name)
.....
.....

Name ..... Position .....
Company Name .....
Address .....
City ..... State .....

DECEMBER, 1956

Please send, without obligation, additional information on New Equipment and booklets described (give Key numbers) .....
.....
.....

Please send more information on advertisements (give Company Name)
.....
.....

Name ..... Position .....
Company Name .....
Address .....
City ..... State .....

INDUSTRIES...FILL IN AS DIRECTED AND DROP IN MAIL BOX!

POSTAGE WILL BE PAID BY TEXTILE

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 882, SEC. 34.9, P. L. & R., ATLANTA, GA.

TEXTILE INDUSTRIES

806 PEACHTREE ST., N. E.

ATLANTA 8, GA.

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 882, SEC. 34.9, P. L. & R., ATLANTA, GA.

TEXTILE INDUSTRIES

806 PEACHTREE ST., N. E.

ATLANTA 8, GA.

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 882, SEC. 34.9, P. L. & R., ATLANTA, GA.

TEXTILE INDUSTRIES

806 PEACHTREE ST., N. E.

ATLANTA 8, GA.

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 882, SEC. 34.9, P. L. & R., ATLANTA, GA.

TEXTILE INDUSTRIES

806 PEACHTREE ST., N. E.

ATLANTA 8, GA.

HELPFUL BOOKLETS FREE!

12-1 PLASTICIZERS—Bulletin lists properties and specifications of fifteen plasticizers. Performance data with polyvinl chloride are presented along with recommendations for use. Write Kessler Chemical Co., Inc. State Rd. & Cottman Ave., Philadelphia 35, Pa.

12-2 RECOVERY OF MERCERIZING CAUSTIC—Booklet gives information on design, application, operation and construction of evaporator for the recovery of mercerizing caustic. Write Swenson Evaporator Co., Harvey, Ill.

12-3 AUTOMATIC GUIDING EQUIPMENT—Booklet describes automatic guiding equipment designed to correctly guide an endless variety of materials. Photos and operational diagrams included. Write Fife Mfg. Co., Inc. Oklahoma City, Oklahoma.

12-4 DRINKING FOUNTAINS & COOLERS—Catalog gives description of all models, with dimensions, illustrations, and other information of interest to companies planning installation of this equipment. Write Halsey W. Taylor Co., Warren, Ohio.

12-5 SYNCHRONOUS INDUCTION MOTOR—Bulletin describes "Synduction" motor, reported to provide dependable constant speed, simplicity of operation and low first cost in applications requiring 40 hp and less. Write for #51B 8440A, Allis-Chalmers Mfg. Co., 1054 S. 70th St., Milwaukee, Wisconsin.

12-6 PHOTOELECTRONIC EDGE CONTROL—Booklet describes fully automatic edge control for textiles, including basic principles and methods of operation. Write Intercontinental Dynamics Corp., 170 Coolidge Ave., Englewood, N. J.

12-7 CONVERTER AND PINDRAFTER—Bulletin gives case history report showing how installation of Pacific Converters and Pin-Drafters at Harding Carpets, Ltd., have shown a profit. Write Warner & Swasey Co., Cleveland, Ohio.

12-8 SWEEPING CONGESTED AREAS—Booklet tells how many congested areas formerly swept by hand can now be power swept. Includes check list to predetermine a power-sweeper's value. Write G. H. Tennant Co., 2524 N. 2nd Street, Minneapolis 11, Minn.

12-9 PLASTIC PARTS AND MATERIALS—Booklet describes the stock, technical staff and production facilities and tells of the many uses and advantages of plastics. Write Engineered Plastics Inc., Gibsonville, N. C.

12-10 STOP DISTORTION, SPOILAGE, KEEP FULL WIDTH—Booklets tell how Mount Hope Free Wheeling Expanders can help prevent distortion, lost profits on spoiled yardage and keep fabrics to full width. Includes mill case history. Write Mount Hope Machinery Co., Taunton, Mass.

12-11 DUPONT SYNTHETICS SERIES—Series of 4 bulletins covers handling of Rayon Weave Beams, Processing Blends of "Dacron" with Rayon, Processing Du-Pont Nylon Staple, and Shipping Information for Rayon Weave Beams. Write Technical Service Section, Textile Fibers Dept. E. I. Du Pont de Nemours & Co., Wilmington, Delaware.

12-12 WEIGHING SYSTEMS—Bulletin features practically every possible arrangement of tank and bin weighing systems. Well illustrated, it describes new weighing system "package". Write A. H. Emery Co., Pine St., New Canaan, Connecticut.

EXACT WEIGHT SCALES

For fast, dependable accuracy
in quality and cost control

Model 103, one of many specialized models of Exact Weight Scales, for the textile industry.

● Exact Weight scales are meeting today's needs for fast, dependable accuracy in a wide variety of weighing operations—from raw materials to finished products. With the ultravisible indicator travel of Exact Weight, extremely close tolerance can be held to any pre-determined weight. The operator can make an accurate reading at a glance. Models are available in any desired capacity with avoirdupois or metric graduations for production operations or for checkweighing.

Specialized models of Exact Weight Scales for:

- DYESTUFFS
- MICRONAIRE TEST
- YARN COUNT
- PRESSLEY-FRACTIONATION
- ROVING WEIGHT
- CONE AND SPOOL WEIGHT

Write for Bulletin 3328—
"Exact Weight Scales for
The Textile Industry."

Sales and Service from Coast to Coast

Exact Weight Scales

Better quality control
Better cost control

THE EXACT WEIGHT SCALE COMPANY

922 W. Fifth Avenue, Columbus 8, Ohio
In Canada: P. O. Box 179, Station S, Toronto 18, Ont.

built to give dependable trouble-free service on all jobs

DARNELL
CASTERS AND WHEELS

Outlast Them All!

RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darneloprene oil, water and chemical-resistant treads.

RUST-PROOFED . . . by zinc plating, Darnell Casters give longer, care-free life

LUBRICATION . . . all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water.

STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

FREE new MANUAL

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

HELPFUL BOOKLETS FREE!

GENERAL, ECONOMICAL MANAGEMENT . . .

3. BEECHCRAFTS AT WORK — Booklet available from Southern Airways Company shows how Beechcraft executive airplanes can save executives time and money. Write — SOUTHERN AIRWAYS CO., Atlanta Airport, Atlanta, Ga.

6. FACTORING SERVICE — Booklet by Trust Company of Georgia gives advantages of factoring, including also information on general backing and pension plans. — TRUST COMPANY OF GEORGIA, Atlanta, Ga.

8. TEXTILE RESEARCH AT AMERICAN VISCOSE — Color booklet tells the story of the Textile Research Department which is, in effect, a many-sided textile mill. — AMERICAN VISCOSE CORP., 350 Fifth Avenue, New York 1, N. Y.

11. "WHERE DID THEY HIT PAY DIRT?" — Booklet describes how many manufacturing concerns have come South and why they found it profitable. Gives industrial advantages of the Southeast. Write CENTRAL OF GEORGIA RAILWAY, Industrial Development Department, 501 Rhodes Haverty Bldg., Atlanta 3, Georgia.

15. NEW INDUSTRIAL FIBER — Technical bulletin now available on Fortisan-36, new industrial fiber by Celanese. Uses text, charts and diagrams to present technical properties, characteristics and recommendations for processing. — TEXTILE SALES DEPARTMENT, Celanese Corporation, Charlotte, N. C.

17. A FAIR DAY'S PAY AND IN RETURN A FAIR DAY'S WORK — 8-page booklet outlining the services offered to industry for the proper utilization of labor, material and equipment, and the resulting advantages for both labor and management. — AMERICAN ASSOCIATED CONSULTANTS, INC., 250 Park Ave., New York, N. Y.

18. RAYON—MILE BY MILE — Color booklet describes how Industrial Rayon Corporation produces rayon mile by mile which is perfect inch by inch. — INDUSTRIAL RAYON CORP., Fifth Ave., New York 18, N. Y.

22. THE WONALANCET WAY' — Is the title of an editorial booklet published five times a year and deals with current problems which appear worthwhile at the time they are written. — WONALANCET COMPANY, 128 Burke St., Nashua, N. H.

23. TEXTILE STEELS — Six booklets are available from Atlantic Steel Company which will prove valuable to persons concerned with the purchase or use of steel. — ATLANTIC STEEL CO., P. O. Box 1714, Atlanta 1, Ga.

24. THE CHEMSTRAND NYLON STORY — Booklet describes one of the greatest industrial ventures of the textile industry in the South — the birth and growth of Chemstrand Nylon. — CHEMSTRAND CORP., 350 Fifth Ave., New York 1, N. Y.

PLANT & PLANT MAINTENANCE . . .

102. "TANK TALK" — Sixteen page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels; cylinders, along with helpful technical data. Also a list of what a few of the cotton mills etc., said. — R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

103. HUMIDIFICATION, EVAPORATIVE COOLING — Bulletins available displaying AMCO automatic self-cleaning atomizers, controls, and evaporative cooling equipment. — AMERICAN MOISTENING CO., 260 W. Exchange St., Providence, R. I.

104. STORAGE WATER HEATING — Isotherm Storage Water Heating Bulletin No. 923 on hot water heating to stretch boiler capacity. Write FRED H. SCHAUB ENGINEERING CO., 2110 South Marshall Blvd., Chicago 23, Illinois.

105. CASTERS AND WHEELS — Catalog gives complete description on full line of industrial casters and wheels. Features patented "LOCKWELD' Steel Casters Without A Kingpin" both Single and Double Ball Race. — THE FAIRBANKS CO., 393 Lafayette St., New York 3, N. Y.

106. FINNELL COMBINATION SCRUBBER-VAC —Illustrated literature gives complete specifications and describes various methods of combination-machine-scrubbing, including method recommended for cleaning oily floors. — FINNELL SYSTEMS, INC., 1300 East St., Elkhart, Indiana.

111. CERTIFIED CLIMATE AIRCHANGER SYSTEM — Bulletin describes Certified Climate Airchanger System as used with direct humidification for partial or complete air conditioning. — PARKS-CRAMER Co., Fitchburg, Mass.

112. HARDWOOD FLOORING — Booklet entitled "Specialist in Manufacturing of Hard Maple Flooring for textile plants." For complete information, write — CONNOR LUMBER & LAND COMPANY, P. O. Box 810, Wausau, Wisconsin.

113. COTTON MILL EQUIPMENT — This book traces pictorially the steps in processing raw cotton into finished cloth. It shows the equipment needed for all phases of production, as well as containing a "Useful Information" section on Power Factor Correction, Lighting, Circuit Protection, etc. — WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

114. PENETRATING WOOD FINISH — Bulletin gives applications, uses and application specifications of floor seals for textiles. — E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIVISION, Wilmington, Delaware.

115. FOAMGLAS — Illustrated brochure features information on how the use of Foamglas cellular glass insulation solved the severe insulating problems of leading users. — PITTSBURGH CORNING CORP., One Gateway Center, Pittsburgh 22, Pa.

116. STOP CORROSION — Details on Speed Rex paint for metal, wood and concrete maintenance solving condensation problems. — TRUSCON LABORATORIES, Box 68, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

118. LIQUIDATION INFORMATION — Information available on how to profitably dispose of mill properties being liquidated. Tells how Comer will buy, sell and relocate industry in your former site. — COMER MACHINERY CO., 684 W. Peachtree St., Atlanta, Ga.

120. STAINLESS STEEL FOR TEXTILES — 40-page booklet gives applications and advantages of stainless in textile plant equipment of all types. — ALLEGHENY LUDLUM STEEL CORP., Dept TI-71, Oliver Bldg., Pittsburgh 22, Pa.

121. CRANES AND HOISTS — Portfolio of bulletins describes the complete line of Shepard Niles traveling hoists and floor or cab operated traveling cranes. — SHEPARD NILES CRANE & HOIST CORP., Montour Falls, N. Y.

122. TEXTILE MILL CLEANING GUIDE — Useful book by Oakite prescribes methods and means of proper mill cleaning and maintenance. — OAKITE PRODUCTS, 26C Rector St., New York 6, N. Y.

123. ROLLER BEARINGS FOR TEXTILES — Easy to read non-technical bulletin describes where and how Hyatt Roller Bearings are employed for more profitable textile production. — HYATT BEARINGS DIV., GENERAL MOTORS CORP., Harrison, N. J.

125. STATIC ELIMINATION — Bulletin by Simco describes effective, simple, safe and inexpensive means of eliminating static. — SIMCO COMPANY, 980 Walnut St., Lansdale, Pa.

126. TOLEDO TRUCK SCALES — Booklet tells how mills may save on installation and throughout long, useful lift of Toledo Truck Scales. Gives capacities and advantages. — TOLEDO SCALE COMPANY, Toledo 1, Ohio.

127. SOLENOID VALVES — Bulletin "V" lists sizes from ⅛ inch to 3 inches; valves for normally open or closed service; stainless steel or Jenkins disc seats; three way solenoid valves, etc.; typical installations. — THE JOHNSON CORP., Three Rivers, Mich.

130. STAINLESS STEEL FABRICATION — Illustrated color booklet by Sims describes the advantages of stainless steel with regard to textile operations. Also includes information on ventilating and drying, slasher exhaust, and materials handling systems. — SIMS METAL WORKS, West Point, Ga.

131. "AIR-PROCESSING" — Set of three bulletins showing real meaning of the term, where it can be used, the requirements for a successful system, etc. — J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

132. AUTOMATIC BOILERS — Bulletin describes POWER-MASTER Automatic Boilers for light and heavy oil; gas or combination Gas-Oil Firing. Complete table of data. — ORR AND SEMBOWER, INC., Reading, Pa.

133. AIR LINE FILTERS — Catalog describes various air line filters for removal of oil, corrosive moisture, abrasive pipe scale, rust, and other solids from compressed air lines. Write for Catalog No. 700. — C. A. NORGREN CO., 3450 So. Elati St., Englewood, Colo.

134. CUT WATER TREATMENT COSTS—Folder presents Oakite Airefiner No. 52, a mildly alkaline compound, that is said to control scale, slime, algae and corrosion. Write OAKITE PRODUCTS, INC., 126C Rector St., New York 6, N. Y.

135. COLOR CONDITIONING — Booklet illustrated in color describes how Du Pont color conditioning puts color to work for you. Many ideas on safety brought out which color can aid. — E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIV., Wilmington 98, Delaware.

138. METAL CONVEYOR BELTS — Recent catalog describes and illustrates Ashworth's entire range of manufacture, including the new Flat Wire Bolt design and application, along with their Woven Wire Constructions and Positive Drive Chain Edge belts. —ASHWORTH BROS. INC., METAL PRODUCTS DIV., Fall River, Mass.

141. SEAMLEX METAL HOSE — New illustrated bulletin No. 955 gives essential information on Seamlex Bronze Hose and diesel exhaust hose. Write SEAMLEX CO., INC., 41-23 24th St., Long Island City, N. Y.

143. UNIT HEATER — The latest improvements, specifications, and complete performance data for Herman Nelson horizontal and vertical unit heaters have been written into a new 36-page product bulletin by the AMERICAN AIR FILTER CO., INC., 215 Central Ave., Louisville, Ky.

144. SCHAUB "03" DEAERATORS — Bulletin No. 1300 explains how modern design, a simplified principle and advanced engineering now bring effective deseration at a budget price. Write FRED H. SCHAUB ENGINEERING CO., 2110 South Marshall Blvd., Chicago 23, Illinois.

146. FUNCTIONAL GLASS BLOCK DATA — Folder shows in detail daylighting function of Light-directing and Light-diffusing Functional Glass Blocks. — PITTSBURGH CORNING CORP., 307 4th Ave., Pittsburgh 22, Pa.

150. RIHCO HUMIDIFIERS AND COOLING SYSTEMS — Bulletin describes new atomizers with construction lessening air consumption in humidifier systems, evaporative cooling systems. — ALDRICH MACHINE WORKS, Greenwood, S. C.

151. INDUSTRIAL BRUSHES — Illustrated booklet of industrial brushes featuring textile usage on shears, printing machines — also flock, raising and cylinder brushes. — M. W. JENKINS SONS, INC., 444 Pompton Ave., Cedar Grove, N. J.

153. LAMINATED TEXTILE PLASTICS — Booklet by Synthane Corporation shows variety, application, and advantages of laminated plastic parts and supplies for the textile industry. — SYNTHANE CORPORATION, TEXTILE DIVISION, Oaks, Penna.

161. AUTOMATIC CLEANING EQUIPMENT — Complete booklet by American MonoRail shows working details and advantages of the Tri-Rail Cleaner, a great improvement over the original unit. — AMERICAN MONORAIL CO., 13107 Athens Ave., Cleveland 7, Ohio.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE — Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs as well as preserving textile mill floors.— G. H. TENNANT COMPANY, 2530 N. Second St., Minneapolis 11, Minn.

HELPFUL BOOKLETS FREE!

173. BLOWERS AND EXHAUSTERS — Bulletin No. 3014-D describes types "E" and "RE" electric blowers and exhausters. Uses and full description of each with detail drawings. — BUFFALO FORGE CO., 490 Broadway, Buffalo 5, N. Y.

174. PAINT STRIPPING BOOKLET — Illustrated booklet providing helpful data on latest materials and methods for simplified stripping of paint. Methods described include: (1) steam gun; (2) hot flow-on; (3) cold spray; and (4) tank immersion. — OAKITE PRODUCTS, INC., 22 Thames St., New York 6, N. Y.

181. AIR FILTRATION — Bulletin 234 describes and illustrates the Auto-Airmat, which is the Automatic Dry-Type air filter. Principle of operation, performance, characteristics, construction and installation fully discussed.—AMERICAN AIR FILTER COMPANY, INC., 275 Central Ave., Louisville 8, Ky.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

203. TREADED LEATHER BELTING — This 16 page booklet describes Houghton's line of patented, specially treaded leather belting for all types of power transmission. Booklet includes valuable engineering and maintenance section. — E. F. HOUGHTON & CO., Philadelphia, Pa.

205. MAINTENANCE OF VARIABLE SPEED DRIVES — Bulletin describes and illustrates the simple but comprehensive program available to keep Reliance V-S Jr. Drives in operation at peak efficiency.—RELIANCE ELECTRIC & ENGINEERING CO., 1088 Ivanhoe Rd., Cleveland 10, Ohio.

208. CUTLER-HAMMER MOTOR CONTROL — Booklets describe the combination starters for the textile industry, for roving frames and spinning frames, loom switch and Cutler-Hammer Motor Control for textile cards. — CUTLER-HAMMER, 315 N. 12th St., Milwaukee, Wisconsin.

209. STEEL PULLEYS — Pictorial review of American Steel Pulleys, their manufacturing processes and some of their end uses. Textile pulleys are featured. — AMERICAN PULLEY CO., 4200 Wissahickon Ave., Philadelphia 29, Pa.

211. LUBRICANTS FOR TEXTILES — Working samples available of Ben Bray Spinning Lubricants, Spindle Oils, Non-Melting Oils, Twister Lubricants. — GEORGIA-CAROLINA OIL CO., Box 101, Macon, Ga.

212. GATES TEXTILE ACCESSORIES — Handy pocket-size catalog B&M-7, fully illustrated, gives specifications of Gates textile accessories including pickers, lug straps, check straps, cone belts, evener belts, harness straps, take-up roll covering, and others. — THE GATES RUBBER COMPANY, 1001 Broadway, Denver 17, Colo.

213. LUBRICATION OF ELECTRIC MOTORS — Illustrated bulletin on lubricating and cleaning ball and roller bearings on electric motors. — NEW YORK & NEW JERSEY LUBRICANT COMPANY, 292 Madison Ave., New York 17, N. Y.

216. BALL BEARINGS FOR TEXTILE MACHINERY — A 40-page catalog illustrating Fafnir Ball Bearing units for replacement or new applications in all phases of textile processing. — THE FAFNIR BEARING CO., New Britain, Conn.

222. AUTOMATIC PRODUCTION CONTROL — Booklet by Reeves Pulley Company, shows application of many automatic processes and controls to the textile industry. Well illustrated, it contains engineering data quite useful to anyone interested.—REEVES PULLEY COMPANY, Columbus, Indiana.

223. LUBRICATION OF BEARINGS — Booklet entitled "Lubrication and Maintenance of Ball and Roller Bearings" gives helpful list of do's and don'ts to prolong bearing life. Also includes valuable information on storage and handling of lubricants. — NEW YORK & NEW JERSEY LUBRICANT CO., 292 Madison Ave., New York 17, N. Y.

225. HYDRAULIC SLASHER DRIVES — Color booklet by Vickers shows how hydraulic drives provide an economical approach to improved slasher operation. Has detailed pictures and enumerates advantages. — VICKERS, INC., 1036 Peachtree St., Atlanta, Ga.

228. NEW NEEDLE OIL — Booklet by Shell gives facts on Vexilla Oil 117, which gives 12 times more rust protection during operation and during shut-down periods. — SHELL OIL CO., 50 West 50th St., New York 20, N. Y.

229. DODGE GENERAL POWER TRANSMISSION MACHINERY — Catalog describes various types of power transmission apparatus by Dodge. Gives specifications, sizes, applications, and prices. Very comprehensive. — DODGE MANUFACTURING CORP., Mishawaka, Indiana.

230. INDUSTRIAL GREASES — Now available from Sinclair is a bulletin detailing qualities and specifications of multi-purpose lithium soap industrial greases. — A. S. RANDAK, SINCLAIR REFINING CO., 600 Fifth Ave., New York, N. Y.

231. MECHANICAL POWER TRANSMISSION — 328-page catalog contains helpful information on Dodge products, including sectional drawings, dimensions, weights, prices, application details and engineering tables. Write DODGE MFG. CORP., Mishawaka, Indiana.

232. "VARI-PITCH" SHEAVE BULLETIN — Stationary and motion control of "Vari-Pitch" sheaves for speed variation up to 76% by means of pitch diameter adjustment, capacities 1 to 600 HP are described in new bulletin. — ALLIS-CHALMERS MFG. CO., Milwaukee 1, Wisconsin.

233. LEATHER BELTING — Booklet by Atlanta Belting Co., describes comprehensively the selection, installation, and proper maintenance of modern leather belting. — ATLANTA BELTING CO., 508-510 Whitehall St., S.W., Atlanta, Ga.

234. SPINDLE OIL — Color brochure describes "Gulfspin," showing how it insures against excessive wear in cast iron bolsters and provides freedom from spindle wobble. — GULF OIL CORPORATION, Gulf Bldg., Pittsburgh, Pa.

235. JOHNSON LEDALOYL BEARING BRONZE — Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings. — JOHNSON BRONZE COMPANY, New Castle, Pa.

237. MOTOR CONTROL — Brochure gives description and engineering data on the Cutler-Hammer Motor Control for roving and spinning frames. Users listed and advantages discussed. — CUTLER-HAMMER INC., Milwaukee, Wisc.

238. TEXTILE LEATHERS CATALOG — Catalog by J. E. Rhoads & Sons gives characteristics and advantages of Rhoads "Tannate" leathers. Complete line is listed and described, and tips for correct installation. Copiously illustrated. — J. E. RHOADS & SONS, 2100 W. Eleventh St., Wilmington 99, Del.

240. CATALOG OF NEEDLE BEARINGS — New catalog conveniently presents design, application and use data for five types of needle bearings. Actually an engineering short course on bearings with visual index units. — THE TORRINGTON CO., Torrington, Connecticut.

242. CYLINDERS AND BOOSTERS — Book by Miller Fluid Power Co. contains complete listing of air and hydraulic cylinders and boosters "in stock," price lists, and graphic explanation of their equipment. Write MILLER FLUID POWER CO., 2040 N. Hawthorne, Melrose Park, Illinois.

243. MOTOR PULLEYS — Catalog describes all of the improved design features for the No. 800 series Reeves Jr. Motor Pulleys. Also outlines automatic control of V-belt tension. Write REEVES PULLEY CO., Columbus, Indiana.

253. TEXTILE LUBRICATION — "Lubrication" a magazine published by the Texas Co. is available. Shows methods and means of lubricating chain drives in very comprehensive form. — THE TEXAS CO., 135 East 42nd St., New York 17, N. Y.

256. METERED LUBRICATION — Booklet entitled "From Fiber to Fabric." Shows advantages of central lubrication systems as applied to various departments of textiles. Write — BIJUR LUBRICATING CORP., Rochelle Park, N. J.

265. SERVICE PROCEDURE FOR BALL BEARINGS — A helpful manual for maintenance engineers giving helpful hints on disassembly, inspection, cleaning, lubrication, and replacement of ball bearings in any mechanism. — NEW DEPARTURE, DIVISION OF GENERAL MOTORS CORP., Bristol, Conn.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types, sizes, dimensions and prices. — THE JOHNSON CORP., Three Rivers, Mich.

302. TEXTILE INSTRUMENTATION—New booklet gives details on Brush Lapcheck, Brush Tension Analyzer, Brush Imperfection Counter, and Improved Uniformity Analyzer. Pictures uses and capacities of each machine discussed. — BRUSH ELECTRONICS CO., 3405 Perkins Avenue, Cleveland 14, Ohio.

304. WASTE HEAT RECOVERY — Color booklet describes Bready System of waste heat recovery from polluted or soiled waste water. Includes pictures and complete facts. — LUDELL MFG. CO., 5200 West State Street, Milwaukee, Wisconsin.

305. AUTOMATIC MOISTURE CONTROL—Booklet tells how Hunter Electro-Psychrometers are used in measuring percentage of moisture in all classes of textiles, whether yarns or fabrics. — HUNTER CONTROLS, INC., DIV., JAMES HUNTER MACHINE CO., North Adams, Mass.

310. HOW TO SELECT LIQUID METERS — Helpful free booklet covers meters for brines, soap solutions, hot and cold water and other chemical solutions that can be handled by composition bronze meters. Write for bulletin 566UTI. — NEPTUNE METER CO., 10 W. 50th St., New York 20, N. Y.

313. "THE FAIRBANKS VALVE COMPARISON CHART" — New reference manual important in specification, ordering, and using of bronze and iron-body valves. — THE FAIRBANKS COMPANY, 393 Lafayette Street, New York 3, N. Y.

315. MICRO SWITCH BULLETIN — Complete selection of bulletins featuring Micro Switch products is now available. Includes prices, characteristics, applications, etc. — MICRO SWITCH DIV., MINNEAPOLIS-HONEYWELL REGULATOR CO., Freeport, Ill.

316. MOISTURE CONTROLLER AND INDICATORS — Literature available from Strandberg Engineering covers indicators for slashers, tenters, etc.; for direct connection to pickers, and automatic controllers for connection to same. — STRANDBERG ENGINEERING LABORATORIES, 416 W. Market St., Greensboro, N. C.

321. RED-RAY BURNERS — Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame. — RED-RAY MFG. CO., 445 W. 45th St., New York, N. Y.

324. STROBOTAC — Informative reprint, "Strobotac Boosts Efficiency in Woolen and Synthetic Mills," — GENERAL RADIO CO., Cambridge 39, Mass.

337. COUNTING DEVICES — Catalog of Trumeter's complete line of counters for every application where counting, measuring or registering is required. Colored pictures illustrate each application. —TRUMETER COMPANY, 1265 Broadway, New York 1, N. Y.

339. NEW LUBRICATED PLUG VALVES—Illustrated booklet by The William Powell Co. features a new line of semi-steel and steel lubricated plug valves. Advantages include quick and positive shut-off. — THE WILLIAM POWELL COMPANY, 2525 Spring Grove Ave., Cincinnati 22, Ohio.

CARDING, SPINNING, WINDING . . .

401. LUMMUS DUSTLESS, STEEL BLENDING FEEDERS — Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking. — ALDRICH MACHINE WORKS, Greenwood, S. C.

your Best Steam Team

Type "S" ROTARY UNION

You can't beat this combination for heating drums and saving steam. The ROTARY UNION* is a trouble-free precision mechanical rotating seal which is self-adjusting and self-aligning. The UNITRAP® is the only trap which *automatically* delivers peak efficiency at all pressures from 0 to 125 lbs. Handles a tremendous volume with a minimum of wear. All working parts are stainless steel. Just order by pipe size, ½" through 2". Contact our nearest office or write for Bulletin 700T and 800T.

PSC UNITRAP

*Trade Name—Patented

Home Office and Factory:

PERFECTING SERVICE COMPANY, 332 Atando Ave., Charlotte, N.C.

BRANCH OFFICES: BALTIMORE—CAMDEN, N. J.—CHICAGO—CLEVELAND—LOS ANGELES—NEW YORK—PROVIDENCE—MONTREAL—TORONTO

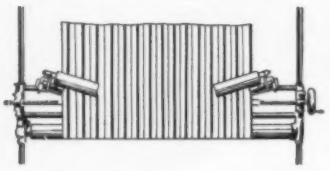
WORLD-FAMOUS GUIDER . . . the sextant has dependably led mariners to their destination . . . for centuries.

WORLD-FAMOUS, too . . . in textile plants everywhere is the ever-dependable

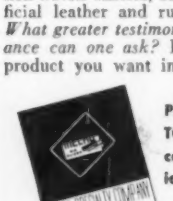
MECHO AIR GUIDER

Famous for INCREASING PROFITS, BOOSTING CLOTH PRODUCTION, REDUCING HANDLING COSTS, DAMAGE and LOSS.

The MECHO Guider is so precision-engineered, it is accurate within one-eighth of an inch of a given mark and ranges from 1 to 400 ypm. Its hypersensitive selvage finger is guaranteed not to turn double edges. An ingenious control . . . without counterweights or linkages . . . infinitely adjusts selvage finger tension, while in operation, to suit the particular weight and weave of fabric. Stainless steel, acid- and moisture-resistant units with sealed bearings are also available.



MECHO Guiders have been standard equipment in hundreds of finishing plants for more than 20 years, handling woven and non-woven fabrics, semi-rigid plastics, artificial leather and rubber, felt and gauze. *What greater testimony to product performance can one ask?* Isn't that the kind of product you want in your plant?



PHONE, WIRE or WRITE TODAY for a MECHO complete Guiding Service catalog; it's free.

GUIDER SPECIALTY COMPANY
431 W. Rock Ave.,
New Haven 15, Conn.

HELPFUL BOOKLETS FREE!

402. AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS — 24-page bulletin describing the American Monorail Automatic Cleaner for preventing accumulation of lint on spinning, twisting, winding and warping machines. Also for cleaning monitors and card room ceilings. — THE AMERICAN MONORAIL CO., Cleveland, Ohio.

403. TRAVELING CLEANERS — 4-page bulletin describes the improved Parks-Cramer Frame and Room Cleaners including the Underframe and Floor Sweepers. — PARK-CRAMER CO., Fitchburg, Mass.

404. LAPLESS ENDLESS SPINNER — Bulletin and full information will be supplied on lapless endless spinner and coning belting. — TON-TEX CORPORATION, 31 Columbus Ave., Englewood, N. J.

406. CARD GRINDING INFORMATION — Outlines care of grinders, instructions on speed to run grinders, amount of oil to add to machine and other pertinent information. — B. S. ROY & SON CO., Worcester, Mass., and Charlotte, N. C.

410. SPINNING FRAME CONVERSIONS — Information available on how to get new-frame results and big-package economy at half the cost with Meadows Conversions. — MEADOWS MFG. CO., P. O. Station A, Atlanta, Ga.

411. SHEET METAL WORK — Pamphlet describes spinning cylinders, aspirators, card screens, sheet metal specialties. — GASTONIA TEXTILE SHEET METAL WORKS, INC., 222 East Long Avenue, Gastonia, N. C.

412. SERVICE FOLDER — Folder covers textile metal products including spinning and twisting cylinders, card screens, etc. — JENKINS METAL SHOPS, INC., Gastonia, N. C.

413. HIGH SPEED, AUTOMATIC QUILLER — Color booklet by Schlafhorst describes the "Autocoper" Automatic Quiller. Gives advantages, space requirements, etc. — TERRELL MACHINE CO., INC., Charlotte, N. C.

414. WORSTED SPINNING — Bulletin explaining and illustrating Saco-Lowell's new system for worsted spinning, from top yarn in five economical and efficient stages. — SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

415. DOUBLER-TWISTER FOR LARGE PACKAGES — Bulletin describing two new machines producing straight or tapered top bobbins. Suitable for filament or spun yarns up to three pound capacity. Individual thread stop motion fully discussed. — FLETCHER WORKS, INC., Philadelphia, Pa.

416. THE BRIEF SAGA OF THE RING TRAVELER — An interesting history relative to the ring traveler, which is in reality the basis of the spinning frame. John Thorpe's invention of ring traveler, the development of the spindle, and the invention of Rabeth's Bolster type spindle are covered. —NATIONAL RING TRAVELER CO., Pawtucket, R. I.

417. FEATHERTOUCH DRAFTING — Booklet describes in detail with pictures the most uniform drawing, the strongest drawing with the highest production per frame at the lowest cost. — IDEAL INDUSTRIES, INC., Bessemer City, N. C.

419. TEXTILE APRONS — Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery. — TEXTILE APRON COMPANY, East Point, Ga.

422. WARPER BEAMS — Folder describes the high speed for rayon tire cord, cotton warper beams, cast aluminum end supports and large diameter heads. — U. S. BOBBIN SHUTTLE CO., Lawrence, Mass.

423. SPINDLE OILING MACHINE — Information available on new Spindle Oiling Machine. Features include filter system to clean oil for reuse; smaller size for narrow aisles. — WICACO MACHINE CORP., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

424. GREASE-SEALED, ANTI-FRICTION ROLLS — Booklet contains description and engineering drawings of the Cole grease-sealed, anti-friction rolls. Also contains information on dual apron controlled drafting units. — COLE ENGINEERING CORP., P. O. Box 153, Columbus, Ga.

425. HANDY REFERENCE TABLES — Folder showing spinning traveler speeds, sizes of ring flanges, etc. — VICTOR RING TRAVELER CO., Providence, R. I., and Gastonia, N. C.

426. UNIRAIL UPTWISTER — Bulletin describes Universal Winding's headless package or bobbin take-up Unirail Uptwister which gives you higher yarn quality and better packages at faster speeds and lower costs, according to the bulletin. Well illustrated with advantages discussed. — UNIVERSAL WINDING COMPANY, P. O. Box 1605, Providence, R. I.

429. BETTER FLYER AND SPINDLE EFFICIENCY — Entertaining booklet by Ideal Machine Shops gives facts about Flyers and Spindles which have helped many mills gain more efficient production, better yarn quality. — IDEAL MACHINE SHOPS, INC., Bessemer City, N. C.

431. TEXTILE VACUUM SYSTEM — Color bulletin by Spin Sa Vac describes application of the vacuum system to drawing, roving and spinning processes, and for the removal of broken ends, fly or sliver. Complete diagrams and shots of typical installations. — SPIN SA VAC CORPORATION, 1438 South Tryon St., Charlotte, N. C.

432. PRECISION TEXTILE WINDING — Bulletin on Kidde Tensions and Density Control for winding rubber cones. — WALTER KIDDE & CO., INC., Belleville, N. J.

433. PERMANENT PLATE MAGNETS — Bulletin shows how Eriez Magnetic Separators prevent fires and protect machinery from tramp iron in all types of textile mills. — ERIEZ MFG. CO., Erie, Pa.

434. SPINNING AND TWISTER RINGS — Catalog and price list now available on Whitinsville "Diamond Finish" spinning and twister rings. Complete details and pictures. — WHITINSVILLE SPINNING RING CO., Whitinsville, Mass.

435. DOUBLE DECK TWISTERS — Bulletin describes Jumbo (8 oz. to 16 oz. headless or take-up spool packages) and Acme (up to 10 oz. packages) models for high speed twisting of silk, rayon, nylon, etc., to finest deniers. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

436. MAINTENANCE INFORMATION FOR YOUR SCOTT TESTER — Booklet containing maintenance data for calibration of Scott Testers, clamps for testers, gear-box lubrication, and recording. — SCOTT TESTERS, INC., Providence, R. I.

437. PRECISION GEAR BULLETINS — Now available from Precision Gear are bulletins on machinery products for cleaning and picking, roving frames, spinning and twisting and a general catalog on gears. — PRECISION GEAR AND MACHINE CO., 2001 N. Tryon St., Charlotte 2, N. C.

438. HEADLESS PACKAGE TWISTER ELIMINATES REDRAWING — Literature shows high-speed Face Drive Twister, for accurately building tapered or straight-end headless packages which go direct to quilling or warping without redrawing. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

439. PNEUMAFIL SUCTION CLEANING SYSTEMS — Booklet describes types of Pneumafil Systems, gives details of new Collector Unit model C-4. New type LFC Pneumafil is also discussed. Diagrams, comparison charts and installation pictures included. — PNEUMAFIL CORP., Charlotte 8, N. C.

440. CUSTOM MADE THREAD GUIDES — Color brochure describes complete line of American Lava Company's thread guides. Composition, properties, specifications of all designs included. — AMERICAN LAVA CORPORATION, Chattanooga 5, Tenn.

444. OPENING AND CLEANING MACHINERY—Color brochure by Dodenhoff describes their waste machine, enclosed feeder, conveyors and cleaner. Specifications included with pictures. — W. D. DODENHOFF CO., Box 178, Greenville, S. C.

445. ROLLER BEARING SPINDLES — Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full-floating footstep bearing is pictured in cut-away views, and its advantages are described. — THE MARQUETTE METAL PRODUCTS CO., 1145 Galewood Ave., Cleveland, Ohio.

447. CONE WINDER — Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply. — FOSTER MACHINE COMPANY, Westfield, Mass.

448. AUTOMATIC BLENDING SYSTEM—Dodenhoff system, called "Fiber Meter" is fully described in color booklet. Gives actual operating results, shows pictures and illustrates typical conversion of old fashioned systems. — W. D. DODENHOFF CO., 745 Loundes Hill Road, Greenville, S. C.

449. NEW CONDENSER TAPE — Literature by Benjamin Booth describes newly introduced SUPR-O-TAPE, an impregnated fabric condenser tape. Shows actual sample of tape and gives complete prices. — BENJAMIN BOOTH CO., Allegheny Ave., & Janney St., Philadelphia 34, Pa.

450. HIGH SPEED AUTOMATIC QUILLER — Color booklet describes the Schlafhorst "Autocoper," listing its advantages and giving dimensions.—TERRELL MACHINE CO., INC., P. O. Box 928, Charlotte, N. C.

451. ROLLER BEARING SPINDLE — Color booklet gives principal features and main advantages of SMM Roller Bearing Spindle. Detailed drawings included. — H. PHIL WORTH, Box 1555, Greenville, S. C.

452. PNEUMAFIL LINT-FREE CREEL — Color booklet describes the new Airfoil Design Pneumafil type LFC with Built-in Lint-Free Creel. Gives complete details and pictures. — PNEUMAFIL CORPORATION, Charlotte 8, North Carolina.

453. EVENNESS TESTER — Folder explaining how this Tester takes the guess out of quality control and each processing step from carding through spinning. — USTER CORPORATION, Charlotte, N. C.

456. SRRL OPENER, SCREW CONVEYORS — Information available on Continental Gin Company's SRRL Opener. Also complete line of screw conveyors and accessories. — CONTINENTAL GIN CO., Birmingham, Ala.

458. CONICAL RINGS AND FLYERS — Special data available on the Herr conical rings and flyers. — HERR MANUFACTURING CO., INC., 318 Franklin St., Buffalo 2, N. Y.

459. TENSION CONTROLS — Folder describing tension compensation and automatic tension controls. Three models — Standard, Warp, and Double Disc fully described with specific application. — WALTER KIDDE & CO., INC., 190 Main St., Belleville 9, N. J.

461. PRECISE WIND MACHINE — Form A-92 describes the Foster Model 75 widely used for winding straight or pineapple cones and tubes of rayon, nylon and other filament yarns. — FOSTER MACHINE COMPANY, Westfield, Mass.

462. TEXTILE MACHINERY PARTS CATALOG — A 24-page illustrated catalog describing the complete line of Dayco and Thorobred textile machinery parts including Cots, Aprons, Loop Pickers, Lug Straps, etc. — DAYTON RUBBER CO., Dayton, Ohio.

465. RAGAN SELF-LUBRICATING RINGS — Complete data available on new self-lubricating rings, outlining unique construction and absence of wicks. — RAGAN RING CO., 901 S. Main St., East Point, Ga.

467. CARD CLOTHING — 8-page booklet by Benjamin Booth Company describes Strip-O-Matic Card Clothing and its advantages. — BENJAMIN BOOTH COMPANY, Allegheny Avenue & Janney Streets, Philadelphia, Pennsylvania.

469. SHORT CUT TO STAPLE FIBER SPINNING — Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams. — TURBO MACHINE COMPANY, Lansdale, Pa.

470. RATCHET DRIVE LUBRICATOR — Technical reference sheet describing an automatic ratchet-driven lubricator is offered. Describes in detail the key features. Includes photograph. — BIJUR LUBRICATING CORP., 151 W. Passaic Ave., Rochelle Park, N. J.

471. FACTS ABOUT YOUR FLYERS AND SPINDLES — Booklet by Ideal Machine Shops shows how smooth Flyer and Spindle operation can help produce higher and more efficient output, good quality yarn, minimum wear, and larger bobbins. — IDEAL MACHINE SHOPS, Bessemer City, N. C.

472. TWISTING MACHINERY — Bulletin gives outstanding features, specifications facts and useful information on Novelty Yarn Twisters for Cotton, Silk, Worsted and Rayon Yarns. — COLLINS BROTHERS MACHINE COMPANY, 647 Roosevelt Ave., Pawtucket, Rhode Island.

HELPFUL BOOKLETS FREE!

473. GIANT ALUMINUM COTTON BEAMS — Information on new 38" by 54½" Section Beams for cotton and spuns. Does work of two 28" beams — save handling time. Write HAYES INDUSTRIES, Jackson, Michigan.

474. BALL BEARING COMB BOXES — Southern States Equipment Corp. offers literature on their famous C-1 Ball Bearing Comb Boxes. Description, working principle, cut-a-way views shown. — SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

475. TEXTILE ROLL COVERINGS AND MILL SUPPLIES — Color booklet by Armstrong shows and describes their complete line of textile roll coverings, including also loom supplies, mill supplies, roll covering for cotton, silk and synthetic and woolen and worsted systems. An excellent guide book. — ARMSTRONG CORK CO., INDUSTRIAL DIV., Lancaster, Pa.

476. TEXTILE FIBER OPENER FOR COTTON, SYNTHETICS, WOOL — New brochure by Cen-Tennial Cotton Gin Co. gives complete data on the Cen-Tennial Opener which incorporates improvements on the original SRRL Opener. Complete operating procedure is described. — CEN-TENNIAL COTTON GIN CO., Columbus, Ga.

478. TIPS ON CARDING PROCEDURE—Monthly bulletin by Ashworth Brothers includes many useful tips and advice on carding operation, maintenance and care and is available to anyone interested. Bulletin is a reprint of section appearing on green paper in this issue. — ASHWORTH BROTHERS, Fall River, Mass.

482. TRU-DRAFT CREELS — Brochure describes the Bouligny Tru-Draft Umbrella Creel as easy to install, adaptable to all frames, completely adjustable, etc. Write THE BOULIGNY CO., P. O. BOX 2115, Charlotte, N. C.

483. COST-CUTTING TEXTILE OILS — New pamphlets have been issued on two oils: Gulfspin, the spindle oil that is said to reduce maintenance and power costs, and Gulftex 39, the nonstaining needle oil that is claimed to keep needles clean and smooth. Write GULF OIL CORP., Rm. 1304 Gulf Bldg., Pittsburgh 30, Pa.

484. COLLECTO-VAC — Catalog 30-A describes Bahnson's new development, COLLECTO-VAC, for collecting lint, fly and broken ends. Write THE BAHNSON CO., Winston-Salem, N. C.

485. WEAVER'S KNOTTER — A catalog on the Boyce Weaver's Knotter giving a few instructions as to its use, recommendation as to the proper type knotter for the various types of yarns, and the spare parts that go to make up the knotter. — A. B. CARTER, INC., Gastonia, N. C.

485. COTTON SIZING WASTE PROBLEM SOLUTION — Booklet describes the use of soluble, low-pollutional CMC in place of starch and how this can reduce costs. — HERCULES POWDER CO., Wilmington 99, Delaware.

WEAVING, SLASHING . . .

501. LOOMS — An accordion type folder is available entitled "Unfolding to You the World's Largest Line of Looms." Information on all types fully discussed. — CROMPTON & KNOWLES LOOM WORKS, Worcester 1, Mass.

502. COUNTING AND MEASURING DEVICES— Condensed textile catalog illustrating and describing pick counters, hank counters, cut meters, measuring counters. Wide range of counting devices for production recording on all types of textile machinery. — VEEDER-ROOT, INC., Hartford, Conn.

504. LOOM SUPPLIES — Literature describing complete line of straps, strapping, pickers, dobby cords, sticks, binders, bumpers, brake lining and allied products. — E. H. JACOBS NORTHERN DIV., THE BULLARD CLARK CO., Danielson, Conn.

505. INNOVATION IN TEXTILE DRYING — Booklet by J. O. Ross gives details on Steam or Gas "Hot Air" Slasher for high speeds at low cost. — J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

506. SLASHING HINTS — A 28-page booklet offering helpful hints on warp sizing. Subjects: Size cooking equipment, section beam tension, sizing selvages, cooking, use of split ends, weighing for size mix, tips on cooking equipment, storage in kettles, etc. — SEYDEL-WOOLLEY & CO., 748 Rice St., N.W., Atlanta, Ga.

508. LOOM PRODUCTION CHARTS — Convenient celluloid card showing yards per loom per week of 40 hours at various loom speeds. — RALPH E. LOPER CO., Greenville, S. C.

510. CONTROLLED SIZING — Brochure in color describes the legend, operation and specification of the new Griffin Size Machine. Features most important basic improvements in size machines in many years. — IRA L. GRIFFIN & SONS, P. O. Box 1576, Charlotte, N. C.

511. ALUMINUM BEAMS — Catalog No. 1-21 describes Hayes magnesium and aluminum specialties for the textile industry. Illustrates this company's beams that are one-third the weight of conventional types. — HAYES INDUSTRIES, INC., Jackson, Mich.

514. THE STORY OF STARCHES — Semi-technical booklet tells the story of starches and information on how they are produced, the creation of new specialty starches, the unique "man-made" starch derivatives, and the handling of starches. — NATIONAL STARCH PRODUCTS, INC., 270 Madison Avenue, New York 16, New York.

515. WARPING, SLASHING, WEAVING ARNEL YARNS — 8-page booklet preliminary information on Arnel Triacetate Yarns. — CELANESE CORP. OF AMERICA, TEXTILE DIVISION, Box 1414, Charlotte, N. C.

517. LOADING SYSTEM — Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices. — THE FOXBORO COMPANY, Foxboro, Mass.

519. ALIGNING LAYS — Informative booklet gives setting instructions for aligning lays. Complete treatment, including step-by-step drawings.—DRAPER CORPORATION, Hopedale, Massachusetts.

520. HELP ON SIZING PROBLEMS—Information from Southern Sizing Company outlines how their superior sizing compounds and superior service can help make your mill run better. — SOUTHERN SIZING CO., East Point, Ga.

521. STEEL WARP BEAMS — 20 page Catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broad-loom and narrow fabrics. Also Textile Machinery Specialties. — MILTON MACHINE WORKS, INC., Milton, Pa.

522. PENFORD GUMS IN TEXTILES — Brochure tells how the wide range of viscosities and the excellent properties of Penford Gums make them desirable for warp sizing spun yarns. — PENICK & FORD, LTD., INC., 420 Lexington Ave., New York 17, N. Y.

52.. STAINLESS DRY CANS — Bulletin describes advantages of Unistel Stainless Dry Cans including details of construction. Profusely illustrated. — UNISTEL TEXTILE MACHINE CORP., 225 Westchester Avenue, Port Chester, N. Y.

526. SACO-LOWELL POSITROL SLASHER — Color Brochure gives 14 advantages of the Saco-Lowell Positrol Slasher. Includes photographs, cut-away drawings, sectional pictures, diagrams, Microphotographs. SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

530. ROTARY UNIONS — New catalog shows how to cut costs, get better sealing on can dryers, slashers, calenders, etc. Catalog No. 500 entitled "Where Good Connections Count." — PERFECTING SERVICE COMPANY, Atlantic Ave., Charlotte, N. C.

532. LOOM HARNESS REEDS — Pamphlet describes in detail the following reeds: All Metal Reeds, Pitch Band Reeds, All Metal Spring Baulk Reeds, All Metal Plush Reeds, All Metal Ribbon Reeds, and special reeds for Warner & Swasey Looms. Write STEEL HEDDLE MFG. CO., 2100 West Allegheny Ave., Philadelphia 32, Pa.

537. WEST POINT'S HOT AIR SLASHER — Bulletin describes advantages and capacities of new hot air slasher by West Point Foundry and Machine Works. Detailed specification included. — WEST POINT FOUNDRY AND MACHINE WORKS, West Point, Georgia.

538. AIR SLASHER DRYER — Pamphlet by Proctor & Schwartz shows construction and operating details of the Proctor Air Slasher Dryer. Advantages listed and cut-away view shown. — PROCTOR & SCHWARTZ, INC., 7th St. and Tabor Rd., Philadelphia 20, Pa.

541. BOOKLETS ON COCKER CUSTOM BUILT EQUIPMENT — Six new bulletins available from Cocker include information on the high speed Warp Sizer, high speed Beam Warper, Cocker Creels and Tensions, Beam Back-Winders, Indigo Dyeing Ranges, Kettles, T-Boxes, etc. — COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.

545. NOPCO CHEMICAL DATA SHEETS — Now available are Nopcostats, Nopco Sizes N and D, Important points in Warp Sizing, Interpretation of Analysis, Wetting Agents, Balanced wool and worsted oils, Acetate warp sizing, Viscose warp sizing, Rayon soaking. — NOPCO CHEMICAL CO., Harrison, N. J.

DYEING, FINISHING CLOTH ROOM . . .

601. CONTINUOUS PEROXIDE BLEACHING RANGES — Booklet gives illustrations and describes uses and gives specification of Ranges. — RODNEY HUNT MACHINE CO., 49 Mill St., Orange, Mass.

603. EMCO ROTARY CUTTER WINDER — Bulletin gives applications, sizes and exclusive features.— H. W. BUTTERWORTH & SONS CO., Bethayres, Pa.

604. DYEING, BLEACHING AND DRYING EQUIPMENT — Excellent color brochure by Morton describes their complete line of dyeing, bleaching and drying equipment for cotton, wool and synthetics. — MORTON MACHINE WORKS, 1718 3rd Ave., Columbus, Ga.

606. HYDRAULIC POWER UNITS — Literature describing hydraulic unit, motor, pump, reservoir, valving a small compact unit for operating of hydraulic calenders, presses, hydraulic controls,—etc. — B. F. PERKINS & SON, INC., Holyoke, Mass.

607. RIBBON CALENDERS — Brochure features Dickerhoff Ribbon Calenders for the purpose of calendering, embossing, etc., of narrow fabrics. — ENGINEERING WORKS, HERM. DICKERHOFF LTD., Wuppertal Barmen, Western Germany.

608. WASHERS FOR SCOURING, BLEACHING, ACIDIFYING — Well-illustrated booklet shows how Sargent's modern, high-capacity, continuous process washers can help maintain quality and decrease costs. Contains operation diagram and good commentary on construction. — C. G. SARGENT'S SONS CORPORATION, Graniteville, Massachusetts, U.S.A., for bulletin 195.

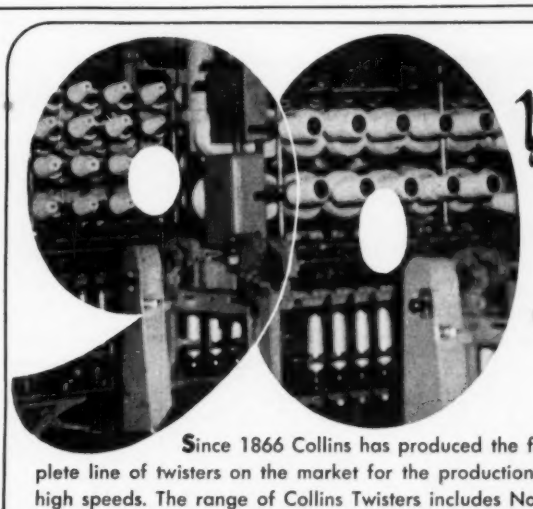
609. WET PROCESSING MACHINERY — Complete file of bulletins on Riggs and Lombard Wet Processing Machinery available. Write for catalog index sheet giving summary. — RIGGS AND LOMBARD, INC., Suffolk Street, Lowell, Mass.

610. PROCTOR DRYING MACHINERY FOR THE TEXTILE INDUSTRY — Illustrated, descriptive catalog on all types of dryers for raw stock, warps, package dyed and automatic skein yarn. Also includes pre-boarding and automatic boarding machines for hosiery. — PROCTOR & SCHWARTZ, INC., 7th and Tabor Rd., Philadelphia, Pa.

611. LOW COST DYEING — Bulletin by Blickman describes their fully enclosed, stainless steel Dyebox. Reports increased production per man hour and more runs per day at lower cost. Write for bulletin 7034.—S. BLICKMAN, INC., Gregory Ave., Weehawken, N. J.

612. JAMES HUNTER MACHINES FOR DYEING AND FINISHING — Comprehensive Catalog contains complete file of bulletins on all Hunter machines having application in dyeing and finishing. Excellent reference data for dyehouses. — JAMES HUNTER MACHINE CO., North Adams, Mass.

613. HERMAS TEXTILE MACHINES — Selection includes brochures on Unwind Stand, Automatic Guiding Unit, Jet Mixer, Selvage Trimming, Clothroom Machinery. — HERMAS MACHINE CO., Hawthorne, N. J.



90 Years of experience stand behind every COLLINS Twister

Since 1866 Collins has produced the finest and most complete line of twisters on the market for the production of quality yarns at high speeds. The range of Collins Twisters includes Novelty, Ply, Big Ring, Beam, Cabling, Wet, Trap, Rayon, Paper, Glass, Single or Dual-Drive, and Special Twisters.

It will pay you to rely on Collins' long technical experience and to check on the many outstanding features found on Collins Twisters.

For Cotton • Rayon • Nylon • Orlon • Wool • Worsted • Etc.

COLLINS BROTHERS MACHINE COMPANY
647 Roosevelt Ave., Pawtucket, R. I. • Charlotte • Chicago
Hugh Williams & Co., 27 Wellington St. E., Toronto 1, Canada

There is a Collins Twister for Every Ply Yarn Construction

"What You Want When You Want It"

WONALANCET

PERUVIAN COTTON

Tangius Pima
Karnak

WONALANCET COMPANY

3240 Peachtree Road, N.E., Atlanta, Ga.
And 128 Burke Street, Nashua, New Hampshire

NOW, in one operation...

Remove rust, oil, grease from STEEL REEDS

with NEW multi-purpose

OAKITE RUSTRIPPER

Ever hear of a safe, *alkaline* rust remover? One that degreases and derusts in one operation ... and strips paint, too? Oakite Rustripper does all three, and does it safely. No cyanide, no troublesome fumes, no disposal problems. You'll be amazed at how much time you'll save with Oakite Rustripper. Call your local Oakite Technical Service Representative for a demonstration, or write to Oakite Products, Inc., 26C Rector Street, New York 6, N. Y.

Export Division Cable Address: Oakite

OAKITE

Technical Service Representatives in Principal Cities of U. S. and Canada

HELPFUL BOOKLETS FREE!

615. HIGH PRODUCTION EXTRACTOR FOR RAW STOCK—YARN—HOSIERY — Descriptive bulletin and full information on automatic Twintainer Extractor with bottom-unloading removable baskets. Machine replaces three conventional extractors, lowers labor costs. — FLETCHER WORKS, INC., Philadelphia, Pa.

617. AUTOMATIC CONTROL SYSTEM FOR CONTINUOUS BLEACHING — Illustrated folder describes the new method of controlling the temperature, pressure, and liquid level in the continuous bleach operation. — TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

618. APPLICATION OF FUGITIVE DYES — Bulletin describes UNITINT operation, giving advantages of effectively controlling the application of fugitive dyes to various fibers. — W. D. DODENHOFF COMPANY, 745 Lowndes Hill Rd., Greenville, S. C.

619. PENFORD FINISHING GUMS — Booklet by Penick & Ford gives complete data, including physical properties and results which may be expected on Penford gums. — PENICK & FORD, Ltd., 420 Lexington Ave., New York 17, N. Y.

620. REGENERATION OF ZEOLITE WATER SOFTENERS — Booklet explains advantages of International's Lixate Process in regeneration of zeolite water softeners. Shows how it cuts costs and does a better job. — INTERNATIONAL SALT COMPANY, INC., Scranton, Pennsylvania.

621. "DYEING SYNTHETIC FIBERS" — Brochure giving a comprehensive, detailed analysis of the methods and materials available for dyeing synthetic fibers. — GENERAL DYESTUFF CO., 435 Hudson St., New York 14, N. Y.

627. SINGLE APRON STOCK DRYERS — Folder presenting the latest idea in automatic drying which every mill having drying problems can profitably use to meet modern manufacturing conditions. — C. G. SARGENT'S SONS CORP., Graniteville, Mass.

628. TREATMENT OF SYNTHETIC TEXTILE FINISHES — High speed drying and curing of synthetic finishes by means of far-infrared radiation is covered in a new 32 page folder entitled "The Textile Report" by Edwin L. Wiegand Company, 7700 Thomas Blvd., Pittsburgh 8, Pa.

630. COMPLETE NAPTHOL MANUAL — Practical working handbook, 110 pages, on textile dyeing and printing applications of Napthols. Write on company letterhead to PFISTER CHEMICAL WORKS, Box 326, Ridgefield, N. J.

631. ELIMINATE DYE-BATH SHOCK — Data sheet by Foxboro shows how woven fabrics and hosiery may be protected from Crow's-feet, uneven shade, creasing caused by too rapid cooling of goods.—OX-creasing caused by too rapid cooling of goods.—FOXBORO COMPANY, 487 Neponset Ave., Foxboro, Mass. Illustrated bulletin detailing right and wrong application and use of washers. — E. H. JACOBS NORTHERN DIV., Danielson, Conn.

636. NAPPERS FOR TREATING ANY FABRICS — Bulletin gives complete details on the Muller Tri-Napping Machine with 24, 30, or 36 rollers. Dimensions and weights included. — FRANZ MULLER, M. Gladbach, Germany.

637. BALL BEARING TURN TABLE — Leaflet describing this 48 inch diameter steel turn table for use in mills where the cloth is delivered in rope form to trucks and the trucks are placed in position ahead of a Scutcher or cloth opening machine. Advantages discussed. — BIRCH BROTHERS, INC., 32 Kent St., Somerville, Mass.

639. ROTARY DYEING MACHINE — Booklet No. 425 illustrating the features of these stainless steel machines used for dyeing hosiery, hats, gloves, socks, etc. — SMITH, DRUM & CO., Allegheny Ave. at 5th St., Philadelphia 33, Pa.

642. SELVAGE OR BACK MARKING MACHINE —Complete specifications and performance data on a new fully automatic marking machine available from Kaumagraph. — KAUMAGRAPH CO., Wilmington 99, Delaware.

643. SURFACE-ACTIVE AGENT — Bulletin gives characteristic properties, suggested applications, etc. of the Nonionic Octylphenoxyethanol Triton Surface-Active Agents. — ROHM & HAAS CO., SPECIAL PRODUCTS DEPT., Philadelphia 5, Pa.

644. DYEING, BLEACHING, FINISHING BULLETINS — Saturator for roped goods, J-Box (for Becco process), J-Box (for duPont Process), Continuous Bleaching Ranges, Carrier Reels, Drum-Type Plaiter are available from WIESNER-RAPP CO., INC., 1600 Seneca Street, Buffalo 10, New York.

645. HYCAR LATICES IN TEXTILES — New 16-page service bulletin features a chart showing the physical properties of the Hycar latices and typical fields of application for each. Write — ADVERTISING DEPARTMENT, B. F. GOODRICH CHEMICAL CO., 324 Rose Bldg., Cleveland 15, Ohio.

647. CURING OVEN — Bulletin gives details of modern, highly efficient gas-fired curing oven for handling resin-treated fabrics. Shows outstanding features and enumerates advantages. Write — JAMES HUNTER MACHINE CO., North Adams, Mass.

653. GUIDERS AND TENSION DEVICES — Illustrated and described are the Mount Hope Precision Guiders and open width Tension Devices used for accurate, straight line guiding of open width goods. Bulletin SG-PG. — MOUNT HOPE MACHINERY CO., Fifteen Fifth St., Taunton, Mass.

656. GET RID OF WRINKLES — Brochure shows how Mount Hope "free wheeling" expanders keep fabrics smooth, at full width, without distortion whenever goods are rolled, nipped, dyed, washed, dried or batched. — MOUNT HOPE MACHINERY CO., Taunton, Mass.

657. PROCESSING ARNEL FABRICS AND BLENDS — Bulletin provides information on dyeing, printing, finishing, and heat treating Arnel. Text, charts and diagrams included. Write for No. TD-15. CELANESE CORP. OF AMERICA, Textile Division, Marketing Dept., Charlotte, N. C.

658. SONOCO TUBES FOR PACKAGE DYEING — Color bulletin describes Sonoco's DYTEX tubes for one-time use in standard package dyeing equipment to achieve uniformity. — SONOCO PRODUCTS CO., Hartsville, S. C.

660. MULTI-STAGE WASHER — Bulletin No. T-111 by Wiesner-Rapp illustrates and describes the versatility, accessibility, efficiency and compactness of the Multi-Stage Washer. Write THE WIESNER-RAPP CO., INC., 1600 Seneca St., Buffalo 10, N. Y.

661. PREVENTION OF FABRIC DISTORTION — How to eliminate fabric distortion and where to check for fabric distortion are discussed in new bulletin. Entire fabric processing operation is reviewed. Write MOUNT HOPE MACHINERY CO., Fifth St., Taunton, Mass.

DYESTUFFS, CHEMICALS, SOAPS . . .

DYESTUFFS, CHEMICALS, SOAPS ... ...

701. MAGNESIUM APPLICATIONS — Case history information on magnesium application in the textile field, published bi-monthly with latest developments in the magnesium industry. — DOW CHEMICAL CO., Midland, Mich.

704. FUNDAMENTALS OF INDUSTRIAL WATER TREATMENT PROCESSES — 24-page booklet entitled "If You Use Water" discusses the fundamentals of the three major classifications of industrial water treatment based on ion exchange softening, dealkalization, and deionization. — ROHM & HAAS COMPANY, RESINOUS PRODUCTS DIV., Washington Square, Philadelphia 5, Pa.

705. THEORETICAL AND APPLIED SILK-SOAKING — Attractive twenty-three page booklet outlining methods of silk-soaking and outlining investigation on the soaking, back-winding and degumming of silk. — HART PRODUCTS CORP., 1440 Broadway, New York 18, N. Y.

707. BRINE FOR TEXTILE INDUSTRY — 32-page booklet on the Lixate Process replaces former booklet on making brine that has been a standard reference for years. Contains much more technical information. — INTERNATIONAL SALT CO., I... ., Scranton, Pa.

710. DEPUMA — An odorless, viscous, non-evaporating emulsion which is highly efficient as an anti-foam, useful in all phases of dyeing and printing. — AMERICAN ANILINE PRODUCTS, INC., 50 Union Square, New York, N. Y.

712. CATALYST AC-6 — Booklet describes how Catalyst AC-6 steps up curing efficiency as much as 25%. Free eight-ounce bottle upon request. — MONSANTO CHEMICAL COMPANY, PLASTIC DIVISION, DEPT. TI-5, Springfield 2, Mass.

714. NEW SODA ASH BULLETIN — 64-page edition contains both new material and revisions of previously used data covering the subject. — SOLVAY SALES DIV., 40 Rector St., New York 6, N. Y.

HELPFUL BOOKLETS FREE!

715. AQUAROL AND ARKANSAS PRODUCTS — Bulletin on Aquarol water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and yarn, hosiery processing. — ARKANSAS CO., INC., Newark, N. J.

719. WOOL OIL — Descriptive booklet on antistatic fiber lubricant, Twitchell 7421. Performance factors given particular emphasis are static control, scourability, lubricity and resistance to yellowing. — EMERY INDUSTRIES, INC., DEPT. 5, Carew Tower, Cincinnati 2, Ohio.

720. INDUSTRIAL OIL — Bulletin catalogs all of Swift's Industrial Oil and Fatty Acid products. Included are detailed specifications, shipping information and suggested usage on products of animal, vegetable and marine sources. — SWIFT & COMPANY, INDUSTRIAL OIL DEPARTMENT, 1800 165th Street, Hammond, Indiana.

722. RESINS & LATICES — Booklet describes chemigum, latex, pliolite latex, pliovic AO and their applications. Gives properties of Goodyear Latices. — GOODYEAR CHEMICAL DIV., 1144 East Market St., Akron 16, Ohio.

723. CHEMICAL CATALOG — Features detergents, wetting agents, emulsifiers, brighteners, sequestrants, dyeing assistants with chemical composition, properties and application.—ANTARA CHEMICALS DIV., GENERAL ANILINE & FILM CORP., 435 Hudson St., New York 14, N. Y.

724. WICA CHEMICAL BULLETINS — Bulletins describe in technical terms the various Wica Products for textiles. Issued each month for the benefit of industry, they are an excellent help in wet processing. To get on the mailing list write WICA CHEMICALS, INC., P. O. Box 506, Charlotte, N. C.

726. CELANESE ORGANIC CHEMICALS—Booklet gives complete technical details on Celanese organic chemicals including uses and descriptive data. Useful addenda to files.—CELANESE CORPORATION, CHEMICAL DIVISION, 180 Madison Ave., New York 16, N. Y.

727. COLOR PRINCIPLES — Booklet available from Sandoz Chemical describes the fundamental principles of color and its measurement. Booklet has been adopted by several of the leading textile schools. — SANDOZ CHEMICAL WORKS, INC., 61 Van Dam Street, New York 13, N. Y.

729. STATIC AND STATIC CONTROL — Papers deal with historical background of static electricity and the problems caused by it along with methods of controlling them. — DEXTER CHEMICAL CORP., 819 Edgewater Road, New York 59, N. Y.

733. WOOL OILS — Twin booklets by Proctor and Gamble tell of the influence of wool oils in producing quality yarns and fabrics, and of Proctor and Gamble's Procol T, an outstanding wool oil. — PROCTOR AND GAMBLE DIST. CO., Cincinnati, Ohio.

734. BLEACHING WITH PEROXYGEN CHEMICALS — Bleaching methods for cotton, rayon, nylon and animal fibers are comprehensively treated in Becco Research and Development Dept. Bulletin No. 52, now available. — BUFFALO ELECTROCHEMICAL CO., INC., Station B, Buffalo 7, New York.

735. NAPTHOL RATIOS SLIDE CHART — Slide guide available which quickly and accurately enables dyer or printer to determine Napthol Ratios. Free to persons writing on company letterhead. — ALLIANCE COLOR AND CHEMICAL CO., 33 Avenue P, Newark 5, N. J.

737. MORTON "PCB" ROCK SALT — Free booklet tells how "PCB" Rock Salt saves money on sequestering agent, eliminates streaks and off-shading, and increases color intensity. — MORTON SALT CO., Industrial Division, Dept. T.I.-3, 120 So. LaSalle St., Chicago 3, Ill.

739. HYDROGEN PEROXIDE — New booklet covering the properties, uses and handling of hydrogen peroxide is now available. Illustrated with tables and diagrams, the text covers chemical reactions, handling and storage. — ADV. AND SALES PROM. DEPT., Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

740. MATCHING M-107 KHAKI SHADE — Formula for matching the government's standard M-107 Khaki shade on 10-oz. tropical worsted has just been released. Write SANDOZ CHEMICAL WORKS, INC., 61-23 Van Dam St., New York 13, New York.

741. SAFE HANDLING OF CHLORINE AND CAUSTIC SODA — Two new illustrated wall charts presenting up-to-date instructions for the safe handling of chlorine and caustic soda, have been prepared for users and handlers of these chemicals. Write INDUSTRIAL CHEMICALS DIV., OLIN MATHIESON CHEMICAL CORP., Baltimore 3, Maryland.

742. TEXTONE NaClO2 — Booklet explains the use of this Sodium Chlorite Product for Textiles Processing. Write OLIN MATHIESON CHEMICAL CORP., 460 Park Ave., New York 22, New York.

745. RAPIDASE FOR DESIZING — Bulletin explaining in detail the properties and characteristics of Rapidase. — WALLERSTEIN CO., INC., 180 Madison Avenue, New York 16, N. Y.

746. INDUSTRIAL CHEMICALS — 24-page booklet listing alphabetically Harshaw industrial chemicals and applications. — THE HARSHAW CHEMICAL COMPANY, 1945 East 97th Street, Cleveland, Ohio.

747. CATIONIC SURFACE ACTIVE AGENT — Technical bulletin describes Harshaw's UVERSOFT "D" which produces full, soft hand while acting as an outstanding anti-static agent. — HARSHAW CHEMICAL CO., 1945 East 97th St., Cleveland 6, Ohio.

748. CHEMICALS, DYES AND INTERMEDIATES — Complete file of bulletins available on Metro-Atlantic products. Covers wide range. Write for product resume showing bulletins offered to METRO-ATLANTIC, INC., Centredale 11, R. I.

753. TRITON X-100 — Booklet available describing this highly concentrated detergent and wetting agent. Main uses fully discussed and chemical properties brought out. — ROHM & HAAS COMPANY, Philadelphia 5, Pa.

757. THE CHEMISTRY OF CYNANURIC CHLORIDE — Very comprehensive technical text by American Cyanamid Co. Gives physical properties, reaction chart, chemical properties, potential applications, toxicity, table of alcohol reactions, table of amine and related compound reactions. — AMERICAN CYANAMID CO., 30 Rockefeller Plaza, New York 20, New York.

766. DU PONT PEROXIDE BLEACHING SYSTEMS — New book illustrating and describing this continuous peroxide bleach system. Layouts and other information included. — E. I. DU PONT DE NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Del.

769. SURFACE TENSION DEPRESSANT — The Booklet, "Mercerizing and Alkamerce — The Ideal Dry" which can be used as a wetting agent; a dye leveling agent, a penetrant in package dyeing. — HART PRODUCTS CORP., 1440 Broadway, New York, N. Y.

774. ROYCE TEXTILE CHEMICALS — This booklet briefly describes the leading Royce products for textile processing, printing, dyeing and finishing. — ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

775. ETHANOLAMINES — Book describes monoethanolamine, diethanolamine, and triethanolamine, listing their applications, chemical and physical properties, physiological properties, etc. — NITROGEN DIVISION, ALLIED CHEMICAL AND DYE CORPORATION, 40 Rector St., New York 6, N. Y.

KNITTING . . .

800. SYNTHANE TEXTILE PARTS — Folder on laminated bobbins, pirns, headless package tubes, hosiery turning and examining forms, sizing bobbins, etc. — SYNTHANE CORP., 9 River Road, Oaks, Pa.

801. THE WILDMAN SINGLEHEAD FULL-FASHIONED HOSIERY MACHINE — Literature on request from the WILDMAN MFG. CO., FULL FASHIONED DIVISION, Norristown, Pa.

803. TIPS ON SEAMING NYLON STRETCH HOSIERY — Pamphlet lists in detail observations and suggestions on seaming nylon stretch hosiery prepared by Union Special as a result of findings of engineers in the field. — UNION SPECIAL MACHINE CO., 407 N. Franklin St., Chicago 10, Ill.

804. BOOKLETS ON FIDELITY MACHINES — Following booklets available: Fidelity "400". Fidelity Multi-Design Ribber, Fidelity Skein Reelers. — FIDELITY MACHINE CO., 3908-18 Frankford Ave., Philadelphia 24, Pa.

808. REINER WARPER — Full width and sectional warpers for all requirements in the knitting and weaving industry fully described in recent catalog. — ROBERT REINER, INC., Weehawken, N. J.

818. FORGED HEAD ALUMINUM BEAMS — Bulletin 49-A shows new beam capable of holding high yardage of nylon and rubber warps, with specifications. Also describes permanent mold aluminum front and section beams. — MILTON MACHINE WORKS, INC., Milton, Pa.

828. THE KIDDE KNITTER — Bulletin describing this newest in Raschel-type warp knitting machines and higher production attained with it. — KIDDE MANUFACTURING CO., INC., Farrand St., Bloomfield, N. J.

SEWING MACHINES . . .

924. BUTT-TACKING SEWING MACHINE — Booklet describes an operating installation of the Merrow single thread butt-tacking sewing machine. Gives performance data, and advantages of butt-tacking. — THE MERROW MACHINE COMPANY, 28 Laurel Street, Hartford, Connecticut.

MATERIALS HANDLING . . .

1003. CASTERS AND WHEELS — 192 pages, describing casters and wheels suitable for all types of industrial applications. Every mechanical engineer and purchasing agent should have this. — DARNELL CORP., LTD., Long Beach 4, Calif.

1006. LANE CANVAS BASKETS — 16-page illustrated booklet describing the Lane line of canvas baskets for textile use. — W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

1007. OVERHEAD HANDLING EQUIPMENT — 56 pages of illustrations showing successful applications of monorail systems to meet every kind of handling problem.—THE AMERICAN MONORAIL CO., 13106 Athens Ave., Cleveland 7, Ohio.

1008. CASTERS AND WHEELS — An illustrated booklet with complete specifications showing a complete assortment of Cotton Textile Casters. — THE COLSON CORP., Elyria, Ohio.

1009. HOW TO TEST CORRUGATED BOXES — 24-page booklet offers a comprehensive check-list by which to judge the protective qualities and durability of specific corrugated boxes. — HINDE AND DAUCH, Sandusky, Ohio.

1010. CONVEYOR KEY BOOK — A guide to production "step-ups" now possible with modern conveying. Shows time-and-effort savings. Well illustrated with photos showing plant layouts and sketches showing where, how and why different types of conveyors are used for maximum results.—LOGAN CO., 1115 Franklin St., Louisville, Ky.

1015. OVERHEAD MATERIALS HANDLING — Three booklets available from Louden Machinery Co. treat economical material handling, twin fan ceiling cleaners, and shock proof electrification. — LOUDEN MACHINERY CO., Fairfield, Iowa.

1018. BALL BEARING TROLLEYS — 20 page catalog by Link Belt describes entirely new line of ball bearing trolleys for overhead conveyors. Contains pictures, specifications charts and diagrams. — LINK-BELT CO., 307 North Michigan Ave., Chicago 1, Illinois.

1019. HOW TO SELECT A LIFT TRUCK — An equipment analysis guide and rating table has been introduced by Hyster for comparison and selection of fork lift trucks. Gives an excellent means for price comparison between trucks of a similar nature. — HYSTER CO., 2902 N. E. Clackamas St., Portland 8, Oregon.

HOW ANDERSON SHIELDS INCREASE SPINNING ROOM EFFICIENCY

Spinning rooms using Anderson Shields save time and money, and prevent disruption when unnecessary breaking, chipping, and splitting of bobbins and spools is avoided. In a year's time these items alone can amount to a surprising sum . . . Insist on Anderson and get the best protection metal shields afford . . . Watch your spinning room efficiency increase!

TEXTILE SHIELD CO., INC.

Metal Protection for Wood Turnings

J. N. ANDERSON, *Treas.*

LAWRENCE, MASS., U.S.A.

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 40)

was also elected chairman of the newly organized Wool Manufacturers Council of the association.

The Philadelphia Textile Institute has advanced five members of the faculty and has added four new teachers. **Robert C. Bokum,** formerly director of the evening school, is now acting head of the new business course; **Richard Landry** has been elevated to assistant professor of chemistry and dyeing; **Dr. Samuel Levin** to associate professor of English; **George J. Gradel** and **William Wolfgang** to assistant professors of chemistry. **William B. Maynard** has joined the faculty as an associate professor of management; **William H. Osmond** is an addition to the physics department as assistant professor; **Ward H. Smith** is an instructor in the chemistry department, and **Mrs. Jean Halversen Green** has joined on a part-time basis as a special lecturer in color.

At a recent meeting of the newly organized Southern Textile Overseers Association, **George S. Pickett,** superintendent of dyeing at Wyandotte Worsted Co., Conestee, S. C., was elected as the group's first president. Other officers chosen were **Charles Grubb,** overseer of finishing, Wyandotte Worsted Co., vice-president; **Lyman Frost,** superintendent of Belton (S. C.) Bagging Co., secretary; **Joseph R. Bowring,** general supervisor, Abbot Worsted Co., Seneca, S. C., assistant secretary; **B. William Wykoczka,** general overseer, Abbott Worsted Co., treasurer; and **Charles Haynes,** Howard Bros. Manufacturing Co., Gastonia, N. C., member of the executive committee.

George H. Dobbie, president of Newlands and Co., Ltd., Galt, Ont., was elected president of the Canadian Woollen & Knit Goods Manufacturers Association, succeeding Jean Louis Heon, president of LaSalle Knitting Co., Ltd., Plessisville, Que., who retired after two years in office. **Francois E. Cleyn,** general manager, Leach Textiles, Ltd., Huntingdon, Que., was chosen vice-president.

At its golden anniversary convention, the North Carolina Textile Manufacturers Association elected as its president **John C. Roberts,** president of Textiles, Inc., Gastonia, N. C.; **Halbert M. Jones,** president of Waverly Mills, Laurinburg, N. C., was made first vice-president; and **William C. Cannon,** vice-president and assistant secretary of Cannon Mills Co., Kannapolis, N. C., was named second vice-president. **Hunter Marshall,** Charlotte, N. C., was reelected secretary-treasurer.

Outgoing president Heiss (left) hands gavel to incoming president Roberts. Others in the picture are Messrs. Jones, Cannon, and Marshall.

At the fifteenth annual meeting of the Textile Education Foundation, Inc., **B. W. Whorton,** president of Dixie Mills, LaGrange, Ga., was elected new president; **John P. Baum,** vice-president of J. P. Stevens & Co., Inc., Milledgeville, Ga., was named vice-president; **Henry W. Swift,** president of Swift Spinning Mills, Columbus, Ga., treasurer; and **T. M. Forbes,** executive vice-president of the Cotton Manufacturers Association of Georgia, was reelected secretary. **A. B. Edge, Jr.,** president of Callaway Mills Co., LaGrange, Ga., was named chairman of the executive committee. Serving with Mr. Edge will be Mr. Whorton, Mr. Baum, **Hansford Sams, Jr.,** assistant to the president, Scottdale (Ga.) Mills, and **William D. Swift,** vice-president, Muscogee Manufacturing Co., Columbus, Ga. New directors are **C. N. Neuner,** manager Aldora Mills, Barnesville; William D. Swift, **L. L. Jones, Jr.,** president Canton (Ga.) Cotton Mills, Mr. Whorton, and **J. M. Cheatham,** president, Dundee Mills, Inc., Griffin, Ga. **Henry McD. Tichenor,** president, Walton Cotton Mill Co., Monroe, Ga., was named chairman of the investment committee. Serving with Mr. Tichenor will be Mr. Whorton, **William D. Ellis,** president, Southern Mills, Atlanta, Ga.; **Clarence E. Elsas,** president Fulton Bag & Cotton Mills, Atlanta, Ga., and Henry W. Swift.

Mr. Wharton accepts the president's shuttle from Mr. Edge. Observing are (left to right) Messrs. Baum, Forbes, and Swift.

Obituaries

John E. Barbey, 67, president of Vanity Fair Mills, Inc., Reading, Pa.

George A. Bates, 77, retired secretary-treasurer of the former Palmetto (Ga.) Cotton Mills, Inc.

Stokes Fenimore Burtis, 63, manager of the Lincolnton, N. C., plant of the Duplan Corp.

Charles B. Carter, 84, former secretary of the National Association of Hosiery and Underwear Manufacturers.

Frank Crummer, 66, assistant treasurer of Aberfoyle Manufacturing Co., Philadelphia, Pa.

Brenton M. Edgar, 60, president of Brenton Textiles, Inc., Statesville, N. C.

Theodore Dunreath Fogleman, 85, vice-president of Fogleman-Jefferies Corp., Burlington, N. C.

James T. Hunter, 64, president of the James Hunter Machine Co., No. Adams, Mass.

William Bell Lawson, retired secretary and assistant treasurer of Pacolet Manufacturing Co., Pendleton, S. C.

William Pickney Ligon, 59, vice-president in charge of cotton for Reeves Bros., Spartanburg, S. C.

Edward A. Lindemann, 54, former general manager of the apparel fabric division of Collins & Aikman, Westwood, N. J.

Isaac S. McManus, 71, former superintendent of Efird Cotton Mills, Albemarle, N. C., and several other North Carolina textile plants, Charlotte, N. C.

Dorris C. Mauney, 75, president of Bonnie Cotton Mills, Kings Mountain, N. C.

F. V. Poletti, 58, retired manager of the now closed Duplan Corp. plant, Grotoes, Va.

Charles M. Schermerhorn, 59, vice-president of W. E. Greene Corp., New York, N. Y.

Harold Schwartz, 47, chief designer, sales and production manager for the Winona (Minn.) Knitting Mills.

John K. Wiley, 89, former secretary-treasurer of the now closed Erbin-Hardin Worsted Mills, Philadelphia, Pa.

What the TEXTILE MILLS are doing

Anglo Fabrics Co., Webster, Mass., is building a plant addition which will double the present finishing capacity.

American Finishing Co., Memphis, Tenn., is expanding its facilities. In addition to its own products, the firm is licensed to produce a number of finishes developed by other companies. Recent additions to the company's activities are: a germicidal "Sanitized" finish; a finish for decorative cotton fabrics, "Sylmer"; and what amounts to a gold and metallic printing on flat fabrics as well as on flannels.

A corporation charter has been issued to **American Knit Fabrics, Inc.,** Maiden, N. C., by the State of North Carolina.

Acme Hosiery Mills, Inc., Ashboro, N. C., producers of ladies' seamless hosiery since 1909, has completed a new air-conditioned plant containing 55,000 sq ft. The one-story brick and steel structure was designed especially to produce ladies' seamless hose from 400- and 474-needle machines. More than 1000 knitting machines will be in use when the plant reaches full operation, along with a sufficient number of loopers. A 12-acre plant site assures adequate space for plant operation and employee parking.

Amerotron Corp. will close its Aberdeen, N. C., plant and combine its operation with that firm's plant in Red Springs, N. C. The transfer will increase employment at the new location by approximately 300; present Aberdeen employees will be given job priority. Increased imports added to an already over expanded segment of the industry, coupled with a changed demand for a type product the Aberdeen plant is not equipped to produce, were given as reasons for the closing.

Plans made by **Bachmann Uxbridge Worsted Corp.** call for the concentration of that firm's worsted cloth production in its three southern mills; that of its woolen and auto cloth in its northern mills.

E. T. Barwick, the president of **E. T. Barwick Mills, Inc.,** Chamblee, Ga., recently announced that the E. T. Barwick Foundation has awarded 25 scholarships for the school year 1956-1957. The awards have been made available in colleges and universities in five southeastern states.

The Ware Shoals (S.C.) Division of the **Riegel Textile Corp.** recently closed all plants for a day to commemorate the 50th anniversary of that firm's founding by Benjamin DeWitt Riegel. A barbecue and entertainment in Riegel Stadium followed the ceremonies in which a bronze bust of the founder was unveiled by his widow. In 1906 she started the first cotton through her husband's new plant. The founder was an early proponent of vertical integration — an idea he developed into the present Riegel operations.

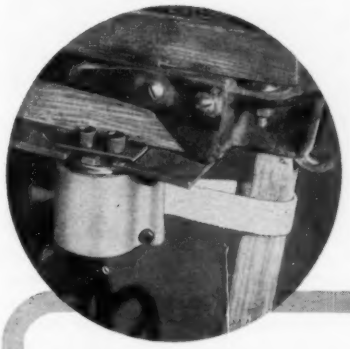
Help Fight TB

Buy Christmas Seals

The entire operations of the **Baxter Woolen Co., Inc.,** Somersworth, N. H., will be concentrated in its recently acquired **East Rochester Mill** in Rochester, N. H. There will be no interruption of work during the changeover from Somersworth.

Berkshire Knitting Mills plans to start operations in a new plant in Barrajas, Spain, in the near future. A plant for the operation, known as **Berkshire Espanola S.A.,** is scheduled for completion early next year. The hosiery will be sold in Spanish and other markets lacking dollar exchange.

Burlington Industries, Inc., has developed a new wash-and-wear fabric for shirting. Called "Travelon,"



The Dodenhoff Hydraulic Checkmaster*

Increases Loom Speeds 10%
Improves Wearing Quality
Cuts Weavers and Loom Fixers Work Load

The Dodenhoff Checkmaster provides a smooth, positive, constant and accurate check of the shuttle on every pick—in both directions without constant adjustments to box and check straps. It stops kinky fillings and produces even selvage. Gives top performance on the first pick Monday morning.

You'll get higher loom speeds and better quality weaving at lower cost with the Dodenhoff Hydraulic Checkmaster. Order a section today.

*Patented

W. D. DODENHOFF CO.
INCORPORATED
GREENVILLE, SOUTH CAROLINA

What the TEXTILE MILLS are doing

the fabric is made of Taslan, a textured Dacron polyester fiber. Shirts made of the fabric can be washed mechanically or by hand, do not pill or fuzz, drip-dry in two to four hours, are smooth and neat after washing, feel good to the body, and maintain a crisp appearance.

About 750 persons, including employees and members of their families, attended the annual fish fry and plant party given by **Carolina Mills, Inc.,** of Maiden and Newton, N. C., recently. Honored during the occasion with 40-year pins were the company president and an employee in the finishing department. Five persons received 35-year pins; five received 25-year pins; and three were recognized for having completed 20 years in the employ of the firm. During the party the company announced a wage increase amounting to approximately 10 cents per hour for the personnel in the four plants.

Coaticook Textiles, Ltd., Coaticook, Quebec, has been purchased by **Canadian Celenese, Ltd.** Plans are to eliminate the tricot manufacture and enlarge the weaving operations. Raymond Duhamel is superintendent.

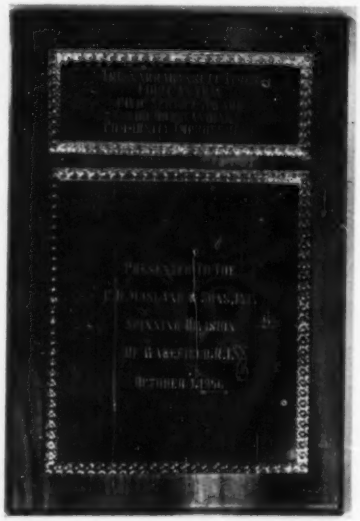
The central research department of **Chicopee Mfg. Corp.** has moved from New Brunswick, N. J., to Milltown, N. J.

Cone Mills Corporation's Union Bleachery, Greenville, S. C., held its annual barbecue recently at the Paris Mountain State Park. Over 1900 tickets were issued to employees and their families. * * * W. A. (Bill) Yown was recently promoted to warehouse foreman. He has been employed by Cone Mills for 19 years.

Brookford (N.C.) Mills, a subsidiary of United Merchants & Manufacturers, Inc., has equipped its lap winders with disks which double the lap size. Other improvements under way include larger sliver cans, and a lap conveyor to pass laps from the winders to the drawing frames. Cloth room changes include the installation of an automatic drop table folder and an overhead doubler in a tandem line. A pent house over the cloth room has been lined with a filter fabric to screen the exhaust from the brushers and shearers. The company station wagon has been equipped with safety belts which must be used by all persons riding in the vehicle.

Colonial Woolen Mills Co., Cleveland, Ohio, has been acquired by a group headed by N. S. Glauber, Jr., president of Winona Textile Mills, Inc., also of Cleveland. The purchased firm will be operated as a separate company, but in conjunction with Winona and Wilson Trading Corp. of New York. Colonial ceased operations in July of this year. Equipment in the 125,000 sq ft plant consisted of carding, weaving, dyeing and other finishing units.

The "Narragansett Times" of Wakefield, R. I., has set up an annual award in the form of a plaque to be given to individuals or concerns in recognition of contributions to improvements of the community. The first such award granted was to the Wakefield spinning division of **C. H. Masland & Sons.** Although Masland was established in 1866, the Wake-



field division has been in operation only a few years. In making the award, the Times paid specific tribute to Masland's property renovations, housekeeping, management-labor relations, and its high standards of good business, and good management.

Kenwood Mills, Cavendish, Vt., division of **F. C. Huyck & Sons,** are entering the men's wear woolen field.

In a move designed to strengthen the firm's competitive position, **Julius Kayser & Co.** is integrating all its plants. The company already has curtailed the production of some less profitable styles of low-gauge full-fashioned hosiery and has disposed of some of the equipment not in use. Some plants have been sold as being obsolete. The purchase of new machinery for seamless stocking production is under way — plans call for the completion of the seamless stocking program late next year. * * * Pilot operations at the new plant in Haleyville, Ala., **Haleyville Textile Mills, Inc.,** Plant No. 2, have begun.

Louise Knitting Mills, Durham, N. C., recently purchased by William S. Griffin, has begun operations under the name of **Imperial Hosiery Co.** under the management of F. W. Stedman. The plant will produce an inexpensive line of men's and misses' socks.

Some 4750 employees and their families attended a recent barbecue and program commemorating the passage of 1,000,000 safe man-hours at the No. 1 Mill of **Limestone Mfg. Co.,** Gaffney, S. C.

Lowenstein Cotton & Storage Corp., Anderson, S. C., has been formed as a subsidiary of **M. Lowenstein & Sons, Inc.** Complete cotton classing and warehouse facilities (150,000 sq ft) have been provided to expedite purchase, storage, and shipping of the company's cotton needs. Purchases will be made both from cotton merchants and from the field under the direction of Robert W. Smith.

A new iridescent printing technique (a lacquer stencil process), called the Shimmertone process, has been developed by **Congress Textile Printers,** Hawthorne, N. J. The process imparts highly reflectant tones to a variety of textiles, including 50-denier nylon (and acetate) taffetas, 15-denier nylon tricots, marquisettes, and nylon sheers. The company is conducting experiments to include cottons and blends in the process.

Eleanor Rug Mills, 308 South Pentz St., Dalton, Ga., was recently destroyed by fire which spread from G & C Rubber Coating Co. housed in the same building.

Employees of 25 years or more of service were honored recently by **Fieldcrest Mills, Inc.,** Spray, N. C. A picnic marked the occasion which was attended by more than 600 people. Sixty-six new members were welcomed into the 25-year club: eight people with 50 years or more of service were recognized. * * * The first in a series of training courses in departmental management was begun recently in Spray, N. C., and Fieldale, Va. The courses will continue over a period of years. Arranged by the training department, the courses will be conducted by

instructors from the mills and staff departments. Fifteen supervisors are enrolled in "Training Operators" at Fieldale; 14 are enrolled in "Machinery Efficiency for Carding and Spinning Supervisors" at Spray: 11 are enrolled in "Cost Control for Weave Room Supervisors" at Spray; and 22 foremen and assistants are enrolled in "Methods Improvements" at Spray.

For the production of misses' bobby sox, **Haltom Hosiery Mills, Inc.,** Mount Airy, N. C., has opened a 20,000 sq ft plant employing about 30 persons. President of the firm is George C. Haltom, who also operates plants in Durham and High Point.

North Star Woolen Mills Co., Sanford, Me., is supplying the 1300 blankets purchased for the Marriott Motor Hotel (world's largest drive-in hotel) in Alexandria, Va. Blankets for the king-size beds (80" long) are yel-

low with the edges whipped in yellow or burnt orange thread to allow the maids to select them for size without unfolding — double beds in yellow thread; single beds in burnt orange.

The dye plant and boarding room of the **Shamrock Knitting Mills,** Marietta, Ga., will be moved into a 7000 sq ft addition now being built to the plant. The space left vacant will be utilized for the warehousing and shipping of the firm's "Ivy League swatch buckler" socks.

The area offices of **J. P. Stevens & Co., Inc.,** Greensboro, N. C., have been enlarged by some 10,500 sq ft to accommodate departmental expansions which include some accounting work recently moved from the New York offices. The new addition is a two-story brick and block structure.

Thirty-five people of the **Opp-Micolas Mills,** Opp, Ala., have enrolled in training classes to pursue either high school work or loom fixers classes. Nineteen of the group are in the latter class.

The Fall River, Mass., plant of **Pepperell Mfg. Co.,** will cease operations as the present orders are completed.

In a move to provide greater efficiency and increased production, **Redwood City Knitting Mills,** Redwood City, Calif., has purchased a one-story building and modernized the plant layout. The firm makes sweaters, and specializes in large sizes (range 38 to 44) which are labeled "Rosa Lee Originals of California." The new building is equipped with water cooled air conditioning, and supplements high windows and skylights with fluorescent fixtures to eliminate contrasting glare and shadow.

The **Top Company,** Woonsocket, R. I., is utilizing an additional 75,000 sq ft of floor space, in its North Main St. plant, for wool sorting and handling. Also the company has acquired a building on Allen St. which formerly housed the Sydney Worsted Co., and will use it for wool sorting and storage for the firm's specialty fiber department.

The **Vassalboro (Me.) Mills** of the **Amerotron Corp.** have been bought by a group of local townspeople who hope to lease it to a major textile manufacturer.

Mothproofed for the life of the carpet, broadloom carpeting is being prepared by **M. J. Whitall Associates, Inc.,** Worcester, Mass., in roll form. The new line, known as Finlandia, Area Carpet, allows the purchaser to have his carpet cut from the roll at set points to form individual, complete area rugs. A new carpet, Criterion, also mothproofed for the life of the fabric, is of three-dimensional texture type made in six of the season's favorite shades up to 15′ in width. The mothproofing is applied during the early steps of the fiber dyeing process.

The Hoskins plant (in suburban Charlotte, N. C.) of **Spatex Corp.** will cease operations as soon as current orders are completed.

Caron Spinning Co., Rochelle, Ill., held its bi-annual dinner, open house, and golf party at the Rochelle Country Club recently. More than 100 of the company's customers attended the outing.

PROPER UTILIZATION
OF
LABOR
EQUIPMENT
MATERIALS

CAN MEAN A HEALTHIER
PROFIT PICTURE FOR YOUR MILL

Our list of clients reads like the Blue Book of American Manufacture, and in our files are many expressions as to our service and results accomplished, like the following:

"They have done an outstanding job for us. I consider them as the outstanding organization in this field."

*A GREAT FULLY INTEGRATED TEXTILE MILL**

*Name on request

WRITE FOR FREE COPIES
OF
★ LABOR & MANAGEMENT BENEFIT BY INDUSTRIAL ENGINEERING PRINCIPLES.

★ A FAIR DAYS PAY AND IN RETURN, A FAIR DAYS WORK.

AMERICAN ASSOCIATED CONSULTANTS INCORPORATED

D. S. KEOGH, President
H. B. CRAFT, V.P., Mgr. of Operations

250 Park Avenue — New York 17, N. Y.
Grant Building — Pittsburgh, Pa.
206 Edificio Pastrada, Medellin, Columbia, S. A.

SUPPLIERS News

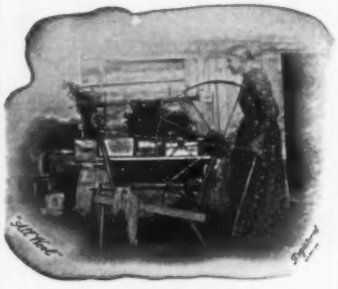
WHAT THEY ARE DOING

The American Pulley Co. has purchased the materials-handling division of the Market Forge Co., which has withdrawn from the field to devote its full manufacturing facilities to products of its several other divisions. Nathaniel Warshaw has joined the American Pulley Co. as manager of its materials-handling division. The development of several new skid load-lift and pallet load-lift trucks has been announced by the firm.

Paul H. Bluestein & Co. has assumed the management of the Hermas Machine Co. Paul H. Bluestein has become president, succeeding George P. Mason. R. R. Simpson remains as general sales manager and Max Kindler continues as director of engineering and general production manager.

EDWARD H. BEST & CO.

Est. 1888 Inc. 1901



KNOXALL

DECATING CLOTH
LAPPING CLOTH
ENDLESS BLANKETS
LEADER CLOTH

MASS., Boston 5 — Office
210 Lincoln Street HUbbard 2-4450

GEORGIA
W. C. HAMES 185 Pinecrest Ave.
Decatur, Ga. Dearborn 5974

SOUTH CAROLINA
B. C. YATES, JR. P. O. Box 3644
Park Place Branch
Greenville, S. C. Tel. 2-0807

Former general sales manager, vice-president and director of Reliance Electric Co. of Canada, George E. Bevis, has been named general sales manager of **Marquette Metal Products Division** of Curtiss-Wright Corp., succeeding Charles E. Miller who has retired after 35 years service with the company. Mr. Miller will continue to serve for a few months in a consulting capacity.

Stein, Hall and Co., Inc., announces the opening of a new plant in Charlotte, N. C. George E. Prime has joined the firm at the new location as assistant to the chief chemist in technical service and development work on new products for the textile field. Mr. Prime was formerly associated with the Esmond Chemical Co. division of General Products Co. as chief chemist of both the control and development laboratories and was also concerned with sales service and plant production supervision.

O. G. Murphy has been appointed selling agent of the **Whitin Machine Works,** and will be located at the Atlanta, Ga., office. Mr. Murphy was formerly assistant general superintendent of Borden Mills, Inc., Kingsport, Tenn. * * * Harry B. Patterson, Walton V. Byers, and Hurley G. Way have been assigned to the new sales and service office which has been opened in Greensboro, N. C.

Succeeding the late Clifford W. Birch as president of **Birch Brothers, Inc.,** is his son, Clifford W. Birch, Jr. Newly elected chairman of the board is Harold W. Birch, and new plant manager is Albert W. Manning who formerly headed the plant engineering, purchasing, and personnel departments of the New England Metallurgical Corp.

Clare H. Draper, formerly associated with the Spartanburg, S. C., sales office of **Draper Corp.** succeeds J. Craig Huff, Jr., as manager of the Greensboro, N. C., division. Mr. Huff, formerly of the northern sales staff has returned to the company's main offices on special assignment in connection with an expanding diversification program. Paul Wilson, a member of the Greensboro sales staff, will assist Mr. Draper.

Harry G. Olson, Warren C. Gray, and Donald G. Warner, have received positions of increased responsibility with **Taylor Instrument Companies.** Mr. Olson has been named divisional sales manager in charge of industrial instrument sales to processors in the textile, air-conditioning, refrigeration, and metals industries. Mr. Gray becomes home office divisional sales manager in charge of instrument sales to processors in the chemical and paper industries, and Mr. Warner now heads up the company's branch in Greensboro, N. C.

Textile Machine Works announces changes in the organization of its international division in the direction of dividing foreign activities on a regional basis. Warren Dresher, manager of the Almelo, Holland, plant, has been designated European manager in charge of European and English operations, with headquarters in Almelo. Mr. Dresher will be in charge of European service, headed by service manager, Russell Lauck, and of all European sales representatives. He will also control and direct managements of Textiel Machines Reading in Almelo; Textile Machine Works (Leicester) Limited in England; and Compagnie Francaise des Machines Reading, Paris, France. Replacing Mr. Dresher as manager of Textiel Machines Reading, is Dolf Mogendorff, former assistant manager.

Allied Chemical & Dye Corp. president, Fred J. Emmerich, was the recipient of an honorary degree from Lowell Technological Institute on the occasion of services held in honor of the memory of Sir William Henry Perkin. Mr. Emmerich was hailed as the "successful guide of the destinies of one of the world's largest chemical companies."

The Bouligny Co., division of R. H. Bouligny, Inc., announces the acquisition of the Whitehead Engineering Co., the entire facilities of which have been moved from Atlanta, Ga., to Charlotte, N. C.

The Kendall Co. has launched construction of its new 35,000 sq ft two-story plant in Franklin, Ky. The new property will triple the firm's capacity for production of Polyken industrial tapes, plastic film, and plastic specialties.

Mr. Eudy
Stepan

Mr. Hall
Sheffield

Mr. Henley
Crown

Mr. Slaughter
Fife Co.

Mr. Ashcroft
Little

Mr. Marsh
Yale & Towne

Stepan Chemical Co. announces that George Eudy of Charlotte, N. C., is joining the organization as southeastern sales representative. Mr. Eudy, formerly associated with Onyx Oil and Chemical Co., resides at 439 E. Wakefield Drive, Charlotte.

The Sheffield Corp. has appointed as its exclusive sales and service representative for Sheffield textile gauges in North and South Carolina and Virginia, W. M. Hall & Sons, cotton merchants and commercial fiber testing laboratory of Belmont, N. C. Walter M. (Prep) Hall, Jr., will head the organization's instrument sales division.

Wrenn Bros. have opened their new materials handling facilities at 2606 Laurens Road, Greenville, S. C.

The Yale & Towne Manufacturing Co. will construct a modern industrial lift truck sales and service branch in Los Angeles, Calif., to serve the counties of Los Angeles, Orange, Riverside, San Bernardino, Inyo, Ventura, Santa Barbara and San Luis Obispo and a portion of southern Nevada. Until completion of the new building, the Yale branch is temporarily occupying sales offices at 6027 Whittier Blvd., with service facilities at 2960 Leonis Blvd., Vernon.

On opening day at the 73rd annual convention of the National Association of Woolen & Worsted Overseers, **H. F. Livermore Corp.** provided at their plant for those members attending, a catered luncheon, a guided tour through the plant to demonstrate manufacturing processes of some of the HFL improved loom parts, as well as their pilot weave room.

In 1956, **Franz Mueller,** a German firm represented in North America by Textile Machinery Import Co., Inc., and in the southern states by Parrot & Ballentine, celebrated its 100th anniversary as a manufacturer of textile machinery.

Crown Chemical Corp. announces the appointment of E. P. (Gene) Henley as technical sales representative covering North Carolina and Virginia, with headquarters in Greensboro, N. C. Mr. Henley was formerly associated with Dexter Chemical Corp.

J. Fred Slaughter of Marietta, Ga., has been appointed southeastern representative for the **Fife Manufacturing Co.,** Oklahoma City, Okla., manufacturers of pneumo-hydraulic guiding equipment.

George W. Johnson, Jr., previously associated with Hart Cotton Mills, Inc., Tarboro, N. C., has been named sales representative for **Chemical Processing Co.** in Ga. and Ala.

A. Griffin Ashcroft, formerly vice-president and director of research and development of Alexander Smith & Sons, Inc., has joined the staff of **Arthur D. Little, Inc.,** at the New York City office.

Richard H. Marsh has been appointed southern regional sales manager of Yale materials handling division, **The Yale & Towne Manufacturing Co.,** with headquarters in Atlanta, Ga.

J. A. Nasmith, vice-president of **Universal Winding Co.,** has the distinction of being the only American member of the Textile Institute to have received a Companionship from the Institute. Mr. Nasmith was so

DURANT DOFFMETER

Model 3-DM
Alaska Gray and
Seal Brown finish

Specifically Designed
for LOOM APPLICATIONS

The Durant Doffmeter is a compact, predetermined counter designed to cut off the loom or signal when the preset number of yards is reached. Eliminates cut marks and waste ends by assuring uniform yardage . . . simplifies inventory control.
Present day high costs make the installation of Durant Doffmeters an every loom a practical money saving investment. Plan now . . . write or contact us for detailed information.

ELIMINATE OVERRUNS

Warns operator or stops machine when run is completed. Yes — eliminates annoying underruns, too!

UNIFORM LENGTHS

Easy, accurate way to assure uniformity in lengths of cloth or yarn.

MAXIMUM PRODUCTION

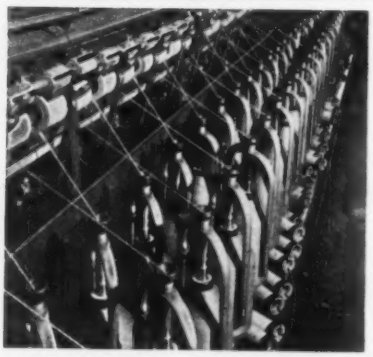
A Durant Doffmeter takes the responsibility — operator can do other work.

Send for Catalog No. 501

DURANT MFG. CO.
1973 N. Buffum St., Milwaukee 1, Wis.
73 Thurbers Ave., Providence 5, R. I.
Representatives in Principal Cities

PRODUCTIMETERS
SINCE 1879 *Count Everything*

honored at the group's recent convocation in Manchester, England. Companionships are granted to members who in the opinion of the Council have substantially advanced the general interests of the textile industry. * * * The company has announced a consolidation of its domestic sales into five sales districts: New England-Midwest, Mid-Atlantic, Southern, Pacific, and Canadian. Frank P. Barrie has been appointed to the new position of district manager in the Southern district, John R. Breen, Mid-Atlantic; and Edward C. Parish in the New England-Midwestern district. The separate divisions of winding and twisting will be merged into one textile machinery division. As assistant sales manager, Thomas L. Cotter will aid Jesse W. Stribling, recently appointed sales manager of this division. The newly-formed activity for distributing Brush Electronic Co.'s products is being separately organized as the instrument section within the textile machinery division, headed by Robert H. Wallace, manager.



HALO TWIST CONDENSERS & ROVING PRETWISTERS FOR ALL SIZES OF FLYERS

In extensive tests actually in the mills, it has been proved that the HALO TWIST CONDENSER effects the following conditions: less ends down, less waste, heavier bobbins, more uniform yarn, up to 20% higher production, and lower costs.

Write for details today. Orders will be filled in one to ten days.

Tillicum
RUBBER COMPANY
LACEY WASHINGTON

New home of McDonough (Ga.) Foundry & Machine.

McDonough Foundry & Machine Division of **McDonough Power Equipment, Inc.,** has moved into its newly constructed, 78,000 sq ft plant in McDonough, Ga. The division produces the McDonough Universal Card Coiler and other textile equipment. John L. Sinback is vice-president of the parent firm.

In a recent purchase, W. D. Dodenhoff Co. became the wholly-owned subsidiary of **James Hunter Machine Co.** James H. Hunter is president of the newly acquired property; William F. Leineweber, Jr., is vice-president and general manager, and Richard A. Hunter is secretary and treasurer.

Ideal Industries, Inc., announces that a building of steel and masonry construction, 100 ft long and 70 ft wide, which will double its manufacturing capacity, is expected to be completed in December, 1956.

The Anderson, S. C., plant of **Owens-Corning Fiberglas Corp.** will receive a new addition which is estimated to increase the capacity for producing yarn by 50,000 pounds daily, providing employment for approximately 1,300.

A special kit of merchandising aids for retail stores which handle "Mitin Durably Mothproofed" items has been made available by the Mitin Retail Service Dept., Geigy Dyestuffs, division of **Geigy Chemical Corp.** The firm has just published its 1956 Resource list which gives the names and addresses of more than 150 mills, commission dyehouses, and yarn suppliers which are authorized to use Mitin, and more than 400 manufacturers of blankets, rugs and carpets, and wearing apparel that is Mitin Durably Mothproofed. Copies of the list may be had by writing the firm at Saw Mill River Road, Ardsley, N. Y.

Century Electric Co. has appointed J. P. Hoffberger to the district managership of the company's Hartford, Conn., office. Mr. Hoffberger was formerly sales manager of the eastern district of the electric motor division of A. O. Smith Corp.

H. W. Butterworth & Sons Co. has announced the retirement of Frederick N. Spoerl, assistant sales manager of the foreign and domestic sales departments. Mr. Spoerl had been associated with the firm for 44 years—interrupted by one and a half years' service in World War I and more than five years' service in World War II, from which he retired with the rank of colonel. He will continue to be available to the Butterworth organization in a consulting capacity.

Mrs. Jane Wallace, director of advertising and sales promotion of the textile division of **Celanese Corporation of America,** has been appointed chairman of the textile committee of the Association of National Advertisers.

Kirkman & Dixon Machinery Co., Greenwood, S. C., announces the development of the K & D Lint Cotton Opener. Among other advantages claimed for the new equipment are economical operation; flexible installation; opening, blending and cleaning in one unit; and ball bearings throughout.

Clearprint, Inc., has completed a new building adjacent to its original plant, doubling the company's factory floor space. The use of metallic colors, photo reproduction, and halftone effects, in flexographic printing, has been developed by Clearprint.

Mr. Norman
Chemstrand

Mr. Sarti
Metro-Atlantic

Mr. Macy

Mr. Sack
Emery Industries

John H. Barrows has joined the sales staff of **The Chemstrand Corp.**, with headquarters at the general sales office in New York, where he will handle sales for both Acrilan acrylic fiber and Chemstrand nylon yarn. Mr. Barrows was previously associated with Wellington, Sears Co. in a sales capacity and with Jones, Gardiner, Beal. * * * William A. Norman, formerly a member of the technical sales service department in Decatur, Ala., has been appointed Canadian technical sales service representative, with headquarters at Fawcett & Co., Canadian sales agents in Toronto.

Metro-Atlantic, Inc., announces the construction of its new dyestuff application and service laboratory in Centredale, R. I. Some of the testing equipment will include standard Fade-Ometer, standard gas fading oven, printing machine, vat ager, acid ager, Dornbusch inlay printing and embossing unit, padder, dry cleaning and wash test equipment and stainless steel dyebaths. Activities of the laboratory will be directed by James Shore, technical director. * * * George W. Sarti, Jr., formerly in the dyeing and finishing department of the Old Fort Finishing Co., has joined the firm as sales representative to the North Carolina and Virginia sales territories.

Dr. Leland S. Liang, head of the marketing research department of **Werner Textile Consultants,** was appointed lecturer on marketing of textiles and apparel at the Bernard Baruch School of Business Administration of the City College of New York, beginning with the fall term of 1956-57. The 15-week course is concerned with underlying principles governing the marketing structure of the textile industry, augmented by case histories depicting successful marketing strategies employed by various mills, and attendance is open to both degree and non-matriculated students.

Emery Industries, Inc., has appointed to its south central territory, Joseph Z. Sack, and to the New England territory Tom W. Macy, Jr., each man to be responsible in his respective area for the sale of the firm's complete line of fatty acids, including stearic, oleic, and hydrogenated acids, and glycerides, animal and fatty acids, and castor oil derivatives.

E. I. du Pont de Nemours & Co., Inc., has announced plans for the construction of two new plants in Virginia, each designed to produce annually 40,000,000 pounds of its respective textile fiber, and both scheduled for completion in 1957. In Richmond, the new plant to produce heavy denier, high tenacity, nylon yarn for use in tire cord and other industrial products will be erected on the site with the company's rayon plant. At Waynesboro, a new unit to produce Orlon acrylic staple and tow will adjoin the acetate yarn manufacturing plant.

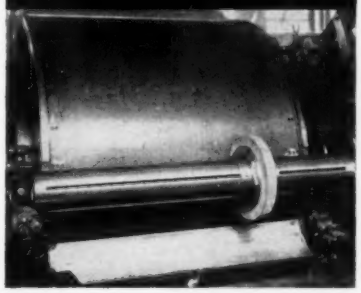
National Aniline Division of Allied Chemical & Dye Corp. announces that its new Chicago office address is Suite 430, The Merchandise Mart, Chicago 54, Ill. Telephone Michigan 2-1800.

Election of Edward E. Helm as president of **Reliance Electric & Engineering Co.** has been announced. Resigning as president, James W. Corey has been made chairman of the board of directors.

Roberts Co. has announced that its assets are being transferred from private to public ownership. A substantial amount in new capital stock has been authorized for public sale, some of it having been subscribed for by a group of Sanford, N. C., residents and other North Carolinians.

Buddy Brooks, formerly representative for E. F. Houghton & Co., has accepted a position as assistant sales manager with **Wyco Chemical Co., Inc.,** of Charlotte, N. C.

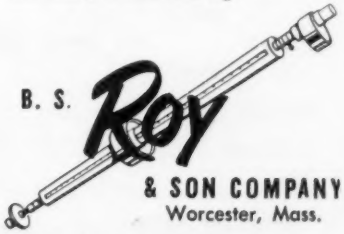
. . . SAVE GRINDING COSTS with B. S. ROY & SON



Stop throwing away profits by dismantling and shipping rolls out for grinding.

Grind it on the job with equipment developed for *your* application by B. S. Roy & Son Company. Leaders in the portable grinding field. B. S. Roy's research and development men will work with you *in your mill* to assure the true surfaces that are so important . . . save you money.

B. S. Roy & Son has engineered portable grinders for maintaining true surfaces on rolls of steel, rubber, husk, cast iron and card clothing.



B. S. ROY & SON COMPANY
Worcester, Mass.

Sales Engineers in the South
Donald Bousquet • Leon Frye
Bill Crowder

Southern Office and Plant
Linwood at Second Ave., Gastonia, N. C.
Telephone Gastonia 4-2126

CLASSIFIED ADS

BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

CLASSIFIED RATES

Rates are net, payable in advance each month. Page is 3 columns, 10 inches deep—30 inches to page. Space measured by even inch vertically by 1, 2 or 3 columns in width. Column width 2¼ inches.
Transient rate for display classified, $16.00 per inch.
Contract rate for space within 12 months period as follows:
12 inches ----------$12.00 Per Inch.

POSITION WANTED: 20c per word per insertion; minimum charge $4.00 Cash with order. Box Number address care of TEXTILE INDUSTRIES, 806 Peachtree St., N.E., Atlanta 5, Ga., count as eight words. Advertisements for help wanted, equipment for sale, for rent or wanted, and professional cards are accepted at display rates only.

POSITION WANTED

AS SUPERINTENDENT OR FOREMAN OF WARP PREPARATION AND WEAVING. TEXTILE GRADUATE, FORTY-TWO YEARS OLD WITH TWENTY YEARS PRACTICAL MILL EXPERIENCE. AGGRESSIVE AND PROFIT MINDED, CAN IMMEDIATELY ASSUME FULL CHARGE OF ALL OPERATIONS INCLUDING PERSONNEL AND PURCHASING. NOW EMPLOYED AS SUPERINTENDENT OF MEDIUM SIZE WEAVING MILL IN SOUTH-EAST BUT WILL CONSIDER RELOCATION TO ANY AREA. REFERENCE. REPLY TO BOX 778, TEXTILE INDUSTRIES, 806 Peachtree Street, N. E., Atlanta 8, Georgia.

YARN SUPERVISOR

CANADIAN COTTON MILL REQUIRES SPINNING SUPERVISOR. CARDING EXPERIENCE ESSENTIAL. STATE SALARY REQUIRED FOR MOVE. Reply to Box 784, TEXTILE INDUSTRIES, 806 PEACHTREE STREET, N.E., ATLANTA 8, GEORGIA.

Check Tensions
in Yarns, Cords, Rubber
Quick Trigger Action
SAXL TENSION METER
Tensitron, Inc., Harvard, Mass.

INTERFERENCE SEMINAR

Thomas F. O'Connor, A.S.M.E.
Management Consultant
209 E. Stone Avenue—Tel. 2-3841
Greenville, S. C.

HARD CHROME PLATED RODS
POLISHED FINISH
FOR
GUIDE RODS & TENSION BARS
Philadelphia Rust-Proof Company,
3229 Frankford Ave.,
Philadelphia, Pa.

BOBBINS, BOBBINS, BOBBINS

We buy and sell good used Quills, Slubber and Twister bobbins. Tell us what you need or what surplus bobbins you have for sale.

CHARLES G. STOVER COMPANY
West Point, Ga.

WANTED: TEXTILE ENGINEER, AROUND 30, WITH SPINNING EXPERIENCE, PREFERABLY WOOL. KNOWLEDGE OF CARBONIZING DESIRABLE BUT NOT REQUIRED. FOR FAST GROWING CALIFORNIA CARPET MILL. VERY GOOD OPPORTUNITY. Reply to Box 782, TEXTILE INDUSTRIES, 806 Peachtree Street, N.E., Atlanta 8, Georgia.

Spinning Section Man wanted for carded cotton yarn mill in Pee Dee Area of South Carolina. Must have high school education and previous experience as Section Man or Overhauler. Must be interested in working for advancement. Age approximately 25 to 35 years. Reply to Box 781, TEXTILE INDUSTRIES, 806 Peachtree St., N.E., Atlanta 8, Ga.

CONFIDENTIAL
EMPLOYMENT SERVICE
For textile mills seeking new personnel and mill executives seeking new positions.
WE INVITE YOUR INQUIRIES
CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street
Boston 8, Mass.
Telephone LIberty 2-6547

DON'T THROW BOBBINS AWAY.

We extend card room, warp, and filling bobbins to your specifications. Ream quills for top drive or do any custom bobbin work.

TEXTILE BOBBIN WORKS, INC.
P. O. Box 545
CLINTON, SOUTH CAROLINA

WANTED

A young man, preferably a Textile School graduate or equivalent in experience for production planning, and wage rating in progressive southern worsted spinning mill. All replies in complete confidence. Person should have already completed military service. Reply to Box 783, TEXTILE INDUSTRIES, 806 Peachtree Street, N.E., Atlanta 8, Georgia.

W. R. C. Smith Publishing Co.
Dept. T-12A
806 Peachtree St., N. E.
Atlanta 8, Georgia

Please enter / renew my subscription to TEXTILE INDUSTRIES for two years.

Name _____
Address _____
City _____
Company Name _____
Title _____
State _____

☐ **Enclosed find $3.00** ☐ **Bill me for $3.00**

1805 AUCTION 1956

Industrial Real Estate
Modern Machinery and Equipment
of the

DARLINGTON MANUFACTURING CO.

Darlington, South Carolina

will be sold to the highest bidders

AT AUCTION

sale to take place on the premises

DECEMBER 12 & 13, 1956, AT 10 A.M.

A fully integrated 45,000 spindle modern cotton mill

★ **200,000 sq. ft. of valuable industrial floor space**
★ **50,000 sq. ft. of warehouse space**
★ **Six dwellings; store**
★ **Vacant ground for expansion**

MODERN MACHINERY CONSISTING OF

Modern Opening and Picking equipment • 136 Saco & Pettee and Saco-Lowell 45" Cards with 15" x 42" coilers • 88 deliveries—18" gauge 5-roll Saco-Lowell Drawing, 56 with 15" x 42" coilers • Saco-Lowell 10 x 5 FS2 Roving, 1948 model and 12 x 6½ Whitin Inter-draft Roving, model 1955 • Approximately 45,000 spindles of Spinning including Saco-Lowell and Whitin 3" gauge Filling Spinning with new top drive spindles; Pneumafil, Superdraft, and Lint-free Creels, and 3¼" and 4" gauge Saco-Lowell Warp Spinning with New Era spindles, with Duo-Roth, 1938 and 1948 model frames • Latest type Uxbridge Hot Air Slashers • Barber-Colman "C" type Spoolers and Barber-Colman Warpers • 84 50" X-2 Draper Looms, new in 1956 (not installed); 360 40" X-model Draper Looms for 28" beams, 1934 to 1940 models, motor driven; 513 40" E-model Draper Looms, motor driven, completely rebuilt in 1952, 464 with 26" beams • Modern Cloth Room equipment, including Curtis & Marble Stitchers, Brushes, Shearers and Folders • Up-to-date machine shop; office, and lab equipment • Auxiliary equipment consists of latest type Parks-Cramer Frame Cleaners and American MonoRail Lap Conveyor system, and Cleveland Tramrail loom cleaners.

Plant open for inspection during business hours. Write or wire for descriptive real estate brochure or illustrated machinery catalog.

SAMUEL T. FREEMAN & CO.

Auctioneers

"Over a century and a half of selling at auction"

1808-10 CHESTNUT STREET, PHILADELPHIA 3, PA.

80 FEDERAL STREET, BOSTON 10, MASS.

ADVERTISER'S INDEX

A

Abbott Machine Co. ..... *
Adams, Inc. ..... *
Advertising Council, Inc. ..... *
Aldrich Machine Works 27
Allegheny Ludlum Steel Corp. ..... *
Alliance Color & Chemical Co. ..... *
Allied Chemical & Dye Corp.-Nitrogen Div. ..... *
Allis-Chalmers Mfg. Co. ..... *
Althouse Chemical Co. ..... *
Alvey Conveyor Mfg. Co. ..... *
American Air Filter Co. 46
American Aniline Products, Inc. 191
American Associated Consultants, Inc. 205
American Cancer Society ..... *
American Enka Corp. ..... *
American Lava Corp. 45
American Moistening Co. ..... *
American Monorail Co., Inc. 136
American Pulley Company ..... *
American Red Cross ..... *
American Viscose Corp. 44
Anheuser-Busch, Inc. ..... *
Arkansas Company, Inc. ..... *
Armstrong Cork Co. 28, 29
Ashworth Bros., Inc. 150
Atkinson, Haserick & Co. 39
Atlanta Belting Co. ..... *
Atlantic Steel Co. ..... *

B

Bagshaw Co., Inc., W. H. ..... *
Bahnson Co. 13
Barber Colman (Textile Div.) 32
Becco Chemical Division ..... *
Bendix Aviation Corporation (Eclipse Machine Division) ..... *
Best & Co., Inc., Edward H. 206
Bijur Lubricating Co. 22
Birch Brothers, Inc. 186
Booth Co., Benjamin ..... *
Bouligny Co., Inc., R. H. ..... *
Branson Company ..... *
Brook Motor Corp. ..... *
Buffalo Forge Co. ..... *
Buffalo Pumps, Inc. 24
Butterworth & Sons Co., H. W. 48

C

Carbic-Moss Corp. ..... *
Carrier Corporation 88
Carter, Inc., A. B. ..... *
Celanese Corp. of America & Subsidiary Cos. 138
Cen-Tennial Cotton Gin Co. ..... *
Central of Georgia Railway Industrial Development Dept. ..... *
Charlotte Chemical Laboratories, Inc. ..... *
Chemstrand Corporation 58
Ciba Company, Inc. ..... *
Clark-Cutler-McDermott Co. ..... *
Classified Ads 210
Clayton Co., J. M. ..... *
Cleveland Tramrail Division, The Cleveland Crane & Engr. Co. ..... *
Clinton Corn Processing Co. 16
Cocker Mach. & Fdry. Co. ..... Front Cover
Cole Co., R. D. 177
Coleman Co., Inc. ..... *
Colgate-Palmolive Co. 214
Collins Bros. Mach. Co. 199
Comer-Avondale Mills, Inc. 184
Comer Machinery Co. 90
Commercial Factors Corp. ..... *
Continental Gin Company ..... *
Cosa Corporation ..... *
Corn Products Refining Co. 76
Courtaulds 17
Crompton & Knowles Loom Works 11
Curlator Corp. (Textile Div.) ..... *
Curtis & Marble Machine Co. ..... *
Custom Scientific Instruments, Inc. 188
Cutler-Hammer, Inc. 65

D

Darnell Corp., Ltd. 196
Dary Ring Traveler Co. ..... *
Davis & Furber Mach. Co. ..... *
Dayton Rubber Mfg. Co. 14, 15
Dayco Division 49
Diehl Mfg. Co. ..... Second Cover
Dodenhoff Company, Inc., W. D. 203
Dodge Mfg. Corp. ..... *
Dommerich & Co., L. F. ..... *
Dow Chemical Company 142, 154
Draper Corporation 1, 67, 68
Dronsfield Bros., Ltd. 182
Du Pont de Nemours & Co., Inc., E. I. (Dyestuff Div.) 33
Du Pont de Nemours & Co., Inc., E. I. (Electrochemicals Dept.) ..... *
Du Pont de Nemours & Co., Inc., E. I. (Finishes Div.) ..... *
Durant Mfg. Co. 207

E

Eaton Mfg. Co. ..... *
Economy Baler Co. ..... *
Emery Industries, Inc. 74
Engineered Plastics, Inc. ..... *
Eriez Mfg. Co. ..... *
Exact Weight Scale Co. 195

F

Fafnir Bearing Co. 23
Fairbanks, Morse & Co. ..... *
Fairtex Corporation ..... *
Fancourt & Co., W. F. 161
Felters Company 6
Ferguson Gear Co. ..... *
Fidelity Machine Company 162
Finnell System, Inc. ..... *
Fisher Mfg. Co. ..... *
Foster Machine Co. 78
Foxboro Company 54, 55
Franklin Process Co. 41
Freeman & Co., Samuel T. 211

G

Garcia Line Corp. ..... *
Garland Manufacturing Co. ..... *
Gaston County Dyeing Machine Co. ..... *
Gastonia Textile Sheet Metal Works ..... *
Gates Rubber Co. 26
Gaylord Container Corp. Div. of Crown Zellerbach Corp. ..... *
General Dyestuff Corp. ..... *
General Dyestuff Corp. (Antara Div.) 36, 37
General Elec. Co., Nela Park ..... *
General Latex & Chemical Co. ..... *
General Radio Co. 56
Georgia-Carolina Oil Co. ..... *
Gessner Co., David ..... *
Goodrich Chemical Co., B. F. ..... *
Goodyear Tire & Rubber Co., Inc. (Chemical Prod.) 5
Guider Specialty Co. 198
Gulf Oil Corp. 73

H

Harshaw Chemical Co. ..... *
Hart Products Corp. 53
Hartford Machine Screw Co. ..... *
Hayes Industries, Inc. ..... *
Herbert Products, Inc. 184
Hercules Powder Co. 156, 157
Hermas Machine Co. ..... *
Herr Mfg. Company ..... *
Hinde & Dauch Paper Co. 84
Howard Bros. Mfg. Co. 75
Hubinger Co. ..... *
Hunt Machine Co., Rodney ..... *
Hunter Machine Co., James ..... *
Huyck & Sons, F. C. ..... *
Hyatt Bearing Division ..... *
Hyster Company ..... *

I

Ideal Industries, Inc. ..... *
Ideal Mach. Shops, Inc. 30
Industrial Rayon Corp. 159
International Salt Co. ..... *
Intertex Corporation ..... *

J

Jacobs Northern Div., E. H. 170
Jenkins Metal Shops, Inc. 172
Jenkins' Sons, Inc., M. W. ..... *
Johnson Corp. 188

K

Keever Starch Company 152
Kidde & Co., Inc., Walter 164
Kidde Mfg. Co., Inc. 51

ADVERTISER'S INDEX

L

Landahl Conveyor Co., The ..... *
Lane & Bros., Inc., W. T. 175
Laurel Soap Mfg. Co. 189
Lazenby & Co., F. A. ..... *
Lenkotex Company, Inc. 178
Lester Laboratories Ltd. 179
Lincoln Engr. Co. ..... *
Livermore Corp., H. F. ..... *
Lockwood Greene Engineers 82
Logan Co. ..... *
Logemann Brothers Co. ..... *
Loper Co., Ralph E. 184
Louden Machinery Co. ..... *
Ludell Mfg. Co. 92, 93

M

Maguire & Co., Inc., John P. 181
Marquette Metal Products Division
Curtis-Wright Corp. ..... *
Marshall & Williams Corp. ..... *
Meadows Mfg. Co. ..... *
Meese, Inc. ..... *
Merrow Machine Co. ..... *
Metro-Atlantic Chemical Co., Inc. ..... *
Micro Switch, a Division of
Minneapolis-Honeywell Regulator Co. .. 35
Miller Corporation, Harry ..... *
Miller Fluid Power Division,
Flick-Reedy Corp. 52
Milton Machine Works 178
Missouri Div. of Resources &
Development ..... *
Monsanto Chemical Co. 25
Monticello Bobbin Co. ..... *
Moretex Chemical Co. 180
Morton Machine Works 34
Morton Salt Co. ..... *
Mount Hope Machy. Co. 50
Mueller, Messrs. Franz ..... *

N

National Aniline Division
Allied Chemical & Dye Corp. 77
Fibers Dept. 146
National Business Publications, Inc. ..... *
National Ring Traveler Co. 140
National Starch Prod., Inc. ..... *
National Vulcanized Fibre Co. 187
Naugatuck Chemicals Div. 57
Nemo Industries, Inc. ..... *
Neptune Meter Co. 8
New Departure Div. ..... *
New England Bobbin & Shuttle Co. ..... *
New York & New Jersey Lubricant Co. .. 40
Nitrogen Division, Allied Chemical &
Dye Corp. ..... *
Nopco Chemical Co. 43
Norgren Co., C. A. 12
North, Inc., Frank G. ..... *

O

Oakite Products, Inc. 200
Olin Mathieson Chem. Corp. 66

P

Pabst Brewing Co. ..... *
Panellit, Inc. ..... *
Parks-Cramer Co. 176
Patterson-Kelley Co., Inc. ..... *
Penick & Ford, Ltd., Co. ..... *
Perfecting Service Company 197
Perkins & Sons, Inc., B. F. ..... *
Pharma Chemical Corp. ..... *
Pick Mfg. Co. ..... *
Pneumafil Corporation 174
Portland Co. (Chapman Static
Eliminator Div.) ..... *
Powell Valves 94
Procter & Gamble Distributing Co. ..... *
Proctor & Schwartz, Inc. 64

R

Ragan Ring Co. ..... *
RCA Engineering Products Div. ..... *
Reeves Pulley Co. 69
Reiner, Inc., Robert ..... *
Reliance Elec. & Engineering Co. ..... *
Rhoads & Sons, J. E. ..... *
Richards-Wilcox Mfg. Co. ..... *
Riggs & Lombard, Inc. ..... *
Robbins & Myers, Inc. 31
Robert & Co., Associates, Inc. ..... *
Roberts Company 9
Rohm & Haas Co. 63
Rose Co., Bennett 190
Ross Engr. Corp., J. O. ..... *
Roy & Son Co., B. S. 209
Royce Chemical Co. ..... *

S

Saco-Lowell Shops 42, 148
Sandoz Chemical Works ..... 158-A & B
Sargent's Sons Corp., C. G. ..... *
Schaub Engineering Co., Fred H. ..... *
Scheer Co., Inc., Geo. ..... *
Schlafhorst & Co., W. ..... *
Seamlex Company, Inc. ..... *
Seydel-Woolley & Co. 88
Sheffield Corporation ..... *
Simco Company 190
Sims Metal Works ..... *
Sinclair Refining Co., Inc. ..... *
Singleton & Sons, Russell A. 186
Sirrine & Co., J. E. ..... Third Cover
Smith, Drum & Co. ..... *
Solvay Process Division, The Allied
Chemical & Dye Corp. 59
Sonoco Products Co. 10
Southern Airways, Inc. 80
Southern Shuttles Div. 71
Southern Sizing Company ..... *
Southern States Equip. Corp. 20, 21
Spin Sa Vac, Inc. ..... *
Staley Mfg. Co., A. E. 72
Standard Brands, Inc. ..... *
Standard Chemical Prod., Inc. ..... *
Stauffer Chemical Co. ..... *
Steel Heddle Mfg. Co. 71
Steel & Tank Service Co. ..... *
Stein, Hall & Co., Inc. ..... *
Stowe-Woodward, Inc. 7
Swift & Company 47
Synthane Corp. 62

T

Taylor Instrument Companies ..... *
Tennant Co., G. H. ..... *
Terrell Co. ..... *
Texas Co. 2
Textile Apron Co. 178
Textile Industries ..... *
Textile Machine Works 160
Textile Paper Products, Inc. 4
Textile Shield Co., Inc. 201
Textile Shops ..... *
Thomaston Mills ..... *
Tillicum Rubber Co. 208
Toledo Scale Co. ..... *
Ton-Tex Corp. ..... *
Tool Service Engineering Co. 183
Torrington Co. ..... *
Treasury Department ..... *
Truscon Laboratories ..... *
Trust Company of Georgia 87
Tyer Rubber Company ..... *

U

U. S. Bobbin & Shuttle Co. ..... *
U. S. Ring Traveler Co. ..... *
U. S. Textile Mach. Co. ..... *
United Elastic Corporation 182
United States Rubber Co.
(Naugatuck Chemicals Div.) 57
Universal Winding Co. 144
Uster Corporation ..... *

V

Van Vlaanderen Co. ..... *
Veeder Root, Inc. ..... Fourth Cover
Vermont Spool & Bobbin Co. 70
Vickers, Inc., Division of Speery
Rand Corp. ..... *
Victor Ring Traveler Co. 60

W

Wallerstein Co., Inc. 61
Walton & Lonsbury Co. ..... *
Want Ads 210
Watson & Desmond ..... *
West Point Fdy. & Mach. Co. 192
Westinghouse Electric Corp.
(Sturtevant Division) ..... *
Whitin Machine Works 18, 19
Whitinsville Spinning Ring Co. 180
Wica Chemicals, Inc. 86
Wicaco Machine Corp. ..... *
Wiesner-Rapp Co., Inc. ..... *
Wildman Mfg. Co. 166
Wonalancet Company 200

Y

Young Aniline Works, Inc. 185

For Processing and Finishing Wools, Cottons, Silks, Synthetics

When you use soap—You Can Depend On

COLGATE FORMULA 10

For the best job!

92% Sodium Oleate • titer on the fatty acids 10° Centigrade • easily dissolved • excellent detergent effect • mild fulling action when you want it • easily rinsed at low temperatures with no bad odor left in the fabric.

Yes, you can depend on COLGATE FORMULA 10* for dozens of textile processing and finishing jobs.

For low-temperature washing *ordinarily requiring olive oil soaps*, try COLGATE FORMULA 25.*

*Sold in eastern states only.

See your local C.P. representative for details, or write today to our Industrial Department.

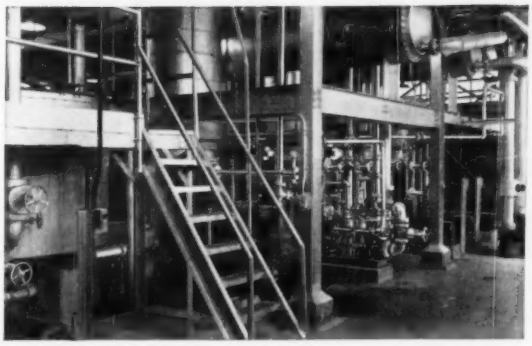
FREE! New 1956 Handy Soap and Synthetic Detergent Buying Guide. Tells you the right product for every purpose. Get a copy from your C. P. representative, or write us at any one of the offices listed below.

COLGATE-PALMOLIVE COMPANY • 300 Park Ave., N.Y. 22, N.Y. • Atlanta 5, Ga. • Chicago 11, Ill.

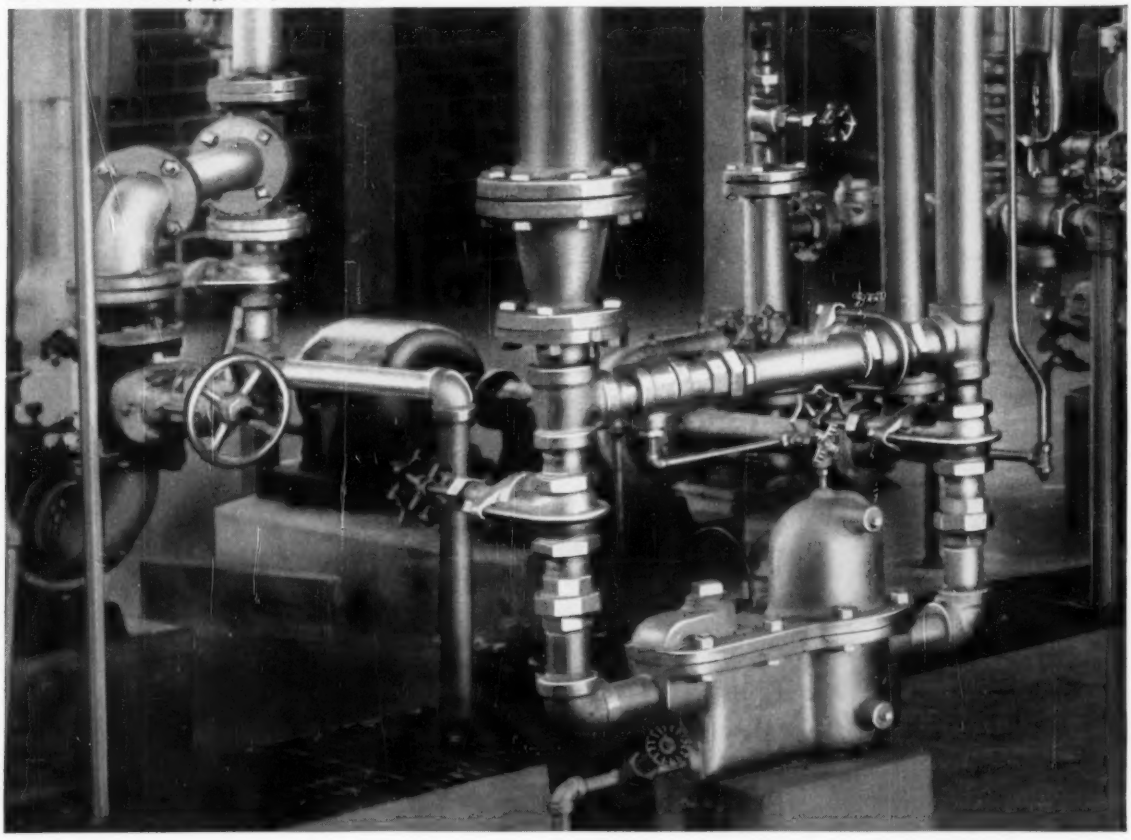
One of a series highlighting the engineer's contribution to industrial progress

PROCESS PIPING

The design of complex piping systems deserves the careful attention of a firm of professional engineers qualified by experience.



The American Thread Company, Sevier, North Carolina



Engineers for 54 Years... J. E. SIRRINE COMPANY

GREENVILLE • SOUTH CAROLINA

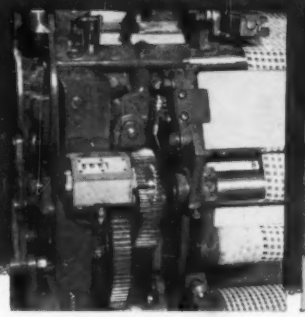
A DEPARTMENTALIZED ENGINEERING ORGANIZATION SERVING BUSINESS, COMMERCE AND INDUSTRY

THIS COMPLETE VEEDER-ROOT "Countrol Package"

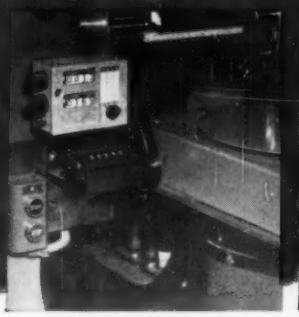
gives you AUTOMATIC UNIFORMITY all through your Mill . . . with New VEEDER-ROOT COUNTERS

. . . on Looms | **. . . on Frames**

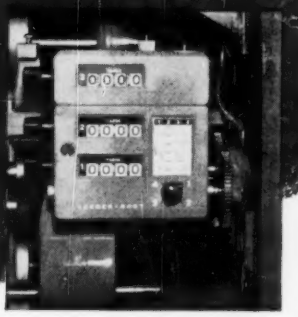
2-3-4 Pick Counter on Loom



Cut Meter on Loom



2-3-4 Hank Counter and Predetermining Counter on Drawing Frame



2-3-4 Yardage Counter and Predetermining Counter on Spinning Frame

On looms, 2-3-4 Pick Counters keep accurate production records and provide a basis for wage payment . . . while Cut Meters help maintain uniformity of cut-lengths of cloth, which is insisted upon today by the cutting-up trades.

On frames and other preparatory equipment, Hank, Yardage and Predetermining Counters hold can-variation to the minimum . . . and make it possible to run the largest economical packages.

This complete Veeder-Root "*Count*rol Package" adds up to better, automatic uniformity all through the mill. And that's why it pays *any* mill to get this Package of new and modern Veeder-Root Counters, when modernizing present machinery or buying new. Get in touch with the nearest Veeder-Root office *today*.

VEEDER-ROOT
INCORPORATED
"The Name that Counts"

HARTFORD 2, CONN. • GREENVILLE, S. C.

Chicago 6, Ill. • New York 19, N. Y.
Montreal 2, Canada •
Offices and Agents in Principal Cities